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SYMPOSIUM

Time and Money: The Macroeconomics of Capital Structure

Garrison and the "Keynes Problem" — **William N. Butos**

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Rethinking Time and Money at the Beginning of the 21st Century — **Ludwig Van den Hauwe**

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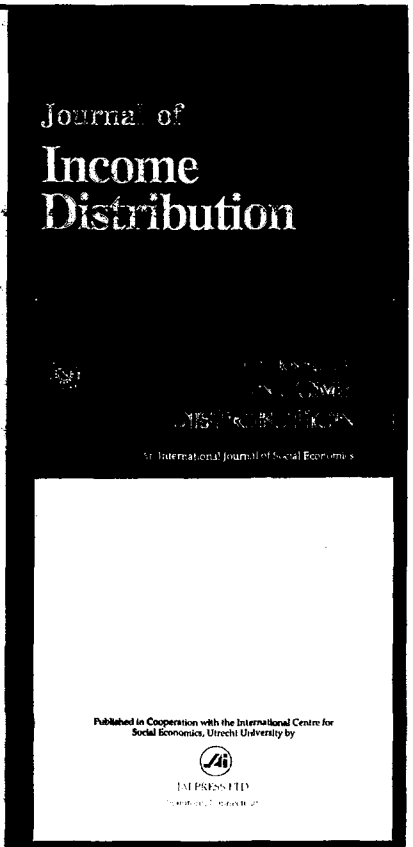
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EDITORIAL

This issue of the *Quarterly Journal of Austrian Economics* is a symposium devoted to an analysis and evaluation of Roger W. Garrison's book, *Time and Money: The Macroeconomics of Capital Structure* (New York: Routledge, 2001). Symposium participants represent a broad cross-section of Austrian economists and fellow travelers working in a variety of specializations related to macroeconomics. The symposium comprises papers originally presented at the 2001 Austrian Scholar's Conference at a special session on *Time and Money*, whose participants were John Cochran, Randy Holcombe, Larry Sechrest, and Joseph Salerno. The symposium also includes additional essays prepared especially for this issue by Bill Butos, Guido Hülsmann, and Ludwig Van den Hauwe.

While it is quite unusual to devote an entire issue of a journal to the appraisal of a single book, in this case it is warranted. In recent years, Austrian economists have produced numerous books in the area of microeconomics, methodology, economic history, and the history of economic thought. They have also published books in areas related to macroeconomics, such as capital theory and the theory of money and financial institutions, which have succeeded in advancing understanding particularly of issues related to "free banking." Yet, there has been a surprising lack of systematic, book-length works in macroeconomics, an area where the Austrian contribution is especially unique and distinctive.

A broad-ranging and in-depth analysis of *Time and Money* from varied perspectives is also justified because the book is an attempt to familiarize the practitioners of mainstream macroeconomics with the unique Austrian approach and to persuade at least some of them that it provides a reasonable and fruitful alternative to the prevailing approaches. Garrison offers the reader a comparative framework in which Austrian economic analysis of the macroeconomy can be judged against the approaches of other schools of thought. He thus develops a graphical model capable of illuminating the main features of monetarism and Keynesianism. Moreover, the graphical modeling of the economy at such a high level of abstraction, which is the novel and key feature of the

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book, remains controversial among Austrian economists, some of whom maintain that graphical analysis should be used only in a limited fashion for illustrative purposes, or even shunned altogether.

This book is a long-awaited project among Austrian economists; some of the central contributions found in the book date back nearly a quarter of a century. The consensus of opinion is that it has been worth the wait and that the book is an important contribution to Austrian economics as well as to the comparative study of macroeconomics schools of thought. Some contributors tended to emphasize the unique analytical contributions of the book, while others tended to focus on its value as an expository device. Many noted that it could provide the platform for the next generation of Austrians to make substantive advances in the area of macroeconomics and capital theory.

Several commentators lauded the graphical exposition in the book, others chose to concentrate on specific analytical issues, while several potentially important criticisms have been leveled at the graphical analysis. Criticisms have also been directed at other aspects of the book. In the scholarly spirit of constructive criticism, these critiques need to be carefully examined and evaluated. Hopefully, this process will result in a future round of contributions by Garrison and others that leads to further progress in Austrian macroeconomics and its broader understanding by the profession at large.

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GARRISON AND THE "KEYNES PROBLEM"

WILLIAM N. BUTOS

Roger Garrison's *Time and Money: The Macroeconomics of Capital Structure* is a landmark addition to Austrian monetary-macroeconomics. It provides an explicit analytical framework that captures essential aspects of different approaches to macroeconomics: capital-based (Austrian), labor-based (Keynesian), and money-based (monetarist). These constitute alternative approaches to macroeconomics that form the basis for the relentless comparative analysis Garrison pursues. With the aid of straightforward graphical constructions, including the production possibility frontier (PPF), the loanable funds market, and Hayekian (1935) "triangles," Garrison brings analytical distinctions between Austrian, Keynesian, and monetarist monetary-economics into sharp relief. This alone makes *Time and Money* a highly attractive alternative to advanced undergraduate- and graduate-level macro texts, but it is the underlying conceptual acuity and explanatory insights in *Time and Money*–what is going on behind the graphs–that elevate the book to something special. In the end, *Time and Money*, despite its outreach to other macroeconomic frameworks, can be seen as an argument for rehabilitating the capital-based approach of the Austrians and reintroducing it into a reformulated modern macroeconomics. Happily, Garrison's approach is a methodologically minimalist one, allowing him to concentrate on the economics (which he does very well) while avoiding the prescriptivism and isolation that sometimes follow from methodological filters. In any case, Garrison's approach is clearly informed by subjectivist insights, and on that score should hold substantial appeal for Austrians.

In Garrison's vision, this new macroeconomics has at center stage the intertemporal structure of capital, but it contains ample scope for the monetary disequilibrium approach as a theory of the recession phase of the business

WILLIAM N. BUTOS is professor of economics at Trinity College. He would like to thank Thomas McQuade for comments and discussion on an earlier draft of the paper. The usual caveat applies.

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cycle (or, in general, for situations of an excess demand for money).[1] Conventional "non-misperceptions" variants of monetarism–in which real balance effects, standard quantity theory results, and transitory departures in real output from the PPF all figure prominently–are found to be compatible with the more foundational capital-based macroeconomics according to Garrison. He dispatches the rational expectations-based approach of new classical macroeconomics because it presumes there is no macroeconomic problem to be solved in a world of "equilibrium always."

Garrison's even-handed and nondogmatic treatment of alternative macroeconomic theories holds that the potential gains from intellectual exchange in certain instances may well be substantial. But even if this sentiment, as charming as it might be, is excessively sanguine, Garrison's real aim–or so it seems to me–is not so much to somehow integrate Austrian macro with other approaches as it is to chisel out an identifiable and meaningful role distinct from other kinds of macro. *Time and Money* "works" on several levels, but clearly one of its real contributions is its demonstration that capital-based (that is, Austrian) macroeconomics has the capacity to analyze questions not only in ways unavailable to other approaches, but also in ways that avoid the mistakes of alternative approaches. The analytical innovation that Garrison employs is the critically important role of the intertemporal structure of capital in explaining episodes of sustainable and nonsustainable economic activity.

The "Keynes Problem"

But what about Keynes and the Keynesians? Where do they stand in all of this? Essentially, although Garrison only intimates this, the thrust of his argument suggests that the development of labor-based macroeconomics since the 1930s is either irrelevant or redundant to the new vision; that Keynesian macroeconomics was not simply a diversion but a "spur" (p. 18).[2] This carries some irony because *Time and Money* sees the economics of Keynes as the key intersection in the development of macroeconomics, and in important ways the book is finally an analysis played out between Keynes and the Austrians, with monetary disequilibrium macro playing a relevant, but hardly decisive, role in the main plot line. As Hicks observed, the sparring between Hayek and Keynes was "quite a drama." *Time and Money* ushers this drama into the

[1] See Horwitz (2000).

[2] Garrison does not address the place or significance of post-Keynesian economics. The Lachmann-Shackle connection suggests to some Austrians that increased dialogue with post-Keynesians would be fruitful. It seems, though, that most Austrians (including Garrison) view such prospects differently. See, for example, the essays by White and Rizzo in Caldwell and Boehm (1992), Garrison (1986), and Butos and Koppl (1997).

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twenty-first century and provides a framework–its interconnected six-quadrant graphical setup–that helps to identify in what ways modern varieties of macroeconomics may be compared and in some cases even reconciled.

The "Keynes Problem," the question of how to "handle" Keynes, is one of the great and ever-present issues in macroeconomics. In the main, the diverse approaches found in contemporary macroeconomics, aside from Austrian macro which Garrison notes as predating the Keynesian onslaught, are either elaborations of Keynes's ideas or reactions to him or his interpreters. Beginning with Hicks, the immensely adaptable fields of "Keynesmania" have given sustenance to generations of macroeconomists facile enough to extract some hitherto undetected insight or set of ideas lurking in, between, or off the pages of *The General Theory*. In no small measure, the resulting mélange is probably as much a testament to the resourcefulness of economists as to the sometimes obscure and hence problematic character of Keynes's writings and thinking. If so, trying to settle on "what Keynes really meant" may be less important to the future of macroeconomics than the problem of reconfiguring Keynes in ways that illuminate fundamental issues in macro and distinctions between alternative approaches. In what follows, I will discuss two aspects of the "Keynes Problem," in particular, questions centering on his "social vision" and his treatment of expectations, as a means for examining Garrison's analysis of Keynes. I suggest that *Time and Money* achieves better success in negotiating the former than the latter question.

The organizing interpretative principle Garrison wisely adopts for the "Keynes Problem" is Allan Meltzer's (1988), which sees Keynes as primarily concerned with the economics of secular slumps and only secondarily with cyclical problems. With this sensible and straightforward expedient, Garrison is able to relocate salient features of Keynes's economics in ways that highlight its distinctive analytical features and, consequently, its points of departure from other approaches.

In this view, volatile investment activity in capitalist investment markets and the cyclical fluctuations it induces result in Keynes's "full employment" only as a transitory outcome at the cyclical peak. The circumstances that generate that outcome are merely fortuitous and cannot reliably ensure or maintain that result; it is, as Garrison astutely puts its, full employment "by accident" (p. 131). Moreover, Keynes was not especially sanguine about the prospects of either conventional fiscal or monetary policies to maintain the peak or prevent the downturn, notwithstanding the availability of these instruments to policymakers and Keynes's presumption in his closed economy setup that the nominal quantity of money was a policy determined (exogenous) variable. This helps to explain the virtual absence of countercyclical policy discussions and recommendations in *The General Theory* of the kind that have formed the policy backbone of standard textbook treatments of

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Keynesian macro. Keynes's lack of emphasis on countercyclical policies did not originate in *The General Theory*, but emerged earlier in his thinking. Thus, in his Harris Foundation lectures, given in Chicago in 1931, Keynes argues that the "causes of the world slump," which he traces "wholly to the breakdown of investment" (Keynes 1973, p. 358), cannot be easily reversed. The attempts of central bankers to "restore confidence" (as a means to induce lower interest rates) is not a reliable tool because the "turning-point may come in part from some chance and unpredictable event" and because "the restoration of confidence must be based . . . on a real improvement in fundamentals" that can break "the vicious circle" (pp. 363-64). Central bank intervention that reduces the long-term rate of interest can increase certain kinds of investment (Keynes claims housing, public utilities, and transportation, but not manufacturing, are interest-rate sensitive), but in the main "a small change in the rate of interest may not be sufficient. . . . That, indeed," Keynes says, "is why I am pessimistic as to an early return to normal prosperity" because "it may be extremely difficult both to restore confidence adequately and to reduce interest rates adequately" (p. 365). Fiscal policy, that is, "new construction programmes under the direct auspices of the government or other public authorities," does not fare well either, because "it is not easy to devise at short notice schemes which are wisely and efficiently conceived and which can put rapidly into operation on a really large scale" (p. 364).

Interest in cyclical phenomena during the interwar years on the Continent, England, and America brought forth a steady stream of important research. And it was certainly a hobbyhorse Keynes mounted. How does this, then, square with the interpretation of Keynes found in *Time and Money*? From the beginning, Keynes's specific interests in economics were oriented toward "real world problems," and like other leading economists of the time, those interests increasingly gravitated toward the character and causes of systemwide instabilities. Keynes's activities indicate that his engagement with colleagues was dominated by closely argued analytical questions that generally fell then, as they do today, into the "cyclical" domain. His engagement as an economist centered on elaborating and defending his economic theories, and the arguments he used were those of a professional economist. During and after the war, Keynes directed much of his effort toward various matters of "practical policy," especially as it concerned the postwar world. And here, too, Keynes gives the general impression of a practicing economist, though now writing and commenting on drab government reports, sticking in the main to his knitting, and avoiding outbursts of a "social vision" that call for the "socialization of investment," such as is encountered in chapter 24 of *The General Theory*.

There are strong hints, however, that chapter 24 was lurking all the while just beneath the surface. In the aforementioned 1931 Harris lectures, Keynes's

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relative disparagement of standard fare countercyclical policies leads him to suggest the following:

> I am not sure that as time goes by we may not have to attempt to organise methods of direct government action along these lines more deliberately than hitherto, and that such action may play an increasingly important part in the economic life of the community. (Keynes 1973, p. 364)

Keynes (1980) approvingly quotes, in a May 1943 memorandum on postwar employment policy ("The Long-Term Problem of Full Employment"), Treasury's Sir H. Henderson's assertion that

> Socialists are on strong ground when they argue reliance on supply and demand, and the forces of market competition, as the mainspring of our economic system, produces most unsatisfactory results. Might we not conceivably find a *modus vivendi* . . . in an arrangement under which the State would fill the vacant post of entrepreneur-in-chief? (p. 322)

His own argument leading to his quoting of Henderson emphasized that the "main task" of a full employment policy "should be to *prevent* large fluctuations" in investment "by a stable long-term programme." How did Keynes imagine this to be achieved?

> If two-thirds or three-quarters of total investment is carried out or can be influenced by public or semi-public bodies, a long-term programme of a stable character should be capable of reducing the potential range of fluctuation [in investment]. (p. 322)

The "onset of this golden age," Keynes tells us, will require changing "social practices and habits so as to reduce the . . . level of saving" because "eventually depreciation funds should be almost sufficient to provide all the gross investment that is required." According to Keynes, fundamental reform, as opposed to countercyclical measures, is necessary for achieving and maintaining full employment because "If a large fluctuation is allowed to occur, it will be difficult to find adequate offsetting measures of sufficiently quick action." Keynes goes on to note that "I doubt if much is to be hoped from proposals to offset unforeseen short-period fluctuations in investment by stimulating short-period changes in consumption" (1980, pp. 324, 322-23).

These considerations broadly support Garrison's argument in chapter 9 ("Secular Unemployment and Social Reform") that Keynes perceived faults of such a serious kind in the market economy that only fundamental reform at the institutional level could correct the problems. Although below I shall return to certain specifics of Garrison's argument, it is useful to entertain the idea here that no tension need exist between Keynes the "social visionary" and Keynes "the economist," since he appears to have realized that the intellectual value of his "social vision" relied on the economic arguments he believed

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conduced toward or perhaps necessitated certain kinds of institutional reform. In other words, I take Keynes to subscribe to the position that the vindication of his social vision had to pass the test of reasoned argument at the level of analytical economics. For example, in *The Treatise on Money* he used the saving-investment relation to show that "windfall" changes in profits (and hence, in his setup, saving) could affect output. However, partially in reaction to *The Treatise*'s lukewarm reception from such notables as Hayek and Robertson, Keynes finally admitted in the preface to the English edition of *The General Theory* that its whole apparatus was too static and sometimes too confused to be of much value in providing a theory of "changes in the scale of output . . . as a whole" in which employment is chronically below its desired size (1936, p. vii). Hayek's (1978, pp. 283-84) explanation that he had chosen not to respond to *The General Theory* because Keynes might again change his mind is unnecessarily harsh, if not disingenuous, because it suggests a dilettantism in Keynes that is difficult to square with the evidence. It may be more to the point to suggest that the analytics contained in *The Treatise*, in effect, was discarded because it failed to provide adequate support for the larger argument Keynes was implicitly trying to advance. Keynes knew where he wanted to end up; the problem he tackled was finding the correct set of tools and arguments to warrant his conclusions. Chapter 24 of *The General Theory* notwithstanding, Keynes's expression of his "social vision" in his scholarly work and published papers, though vital to his overall purpose, is on balance muted and restrained.

If we accept this somewhat more generous reading of Keynes, we would expect to see in *The General Theory* economic arguments constructed to support and lend credibility to his social vision. Keynes, no doubt deeply affected by the long slump in Great Britain and around the world during the 1920s and 1930s, viewed the market economy as subject to chronic unemployment and incapable of generating the necessary adjustment forces to restore and maintain full employment. Most commentators agree that Keynes attributed these maladies to "the dark forces of time and ignorance" (1936, p. 155), which are reflected in investment activity that is volatile and insufficient. As much as anything, it is the inventive ways Keynes developed these supporting arguments that make him interesting. Keynes's economic argument hinges on interest rates that are kept chronically too high and investment outlays that are chronically too small to generate full employment. According to Garrison's discussion in *Time and Money*, Keynes emphasizes the perverse effects of something he calls the "fetish of liquidity," an ongoing and excessive disposition to hoard money; of "lenders' risk," a cost of lending originating from the risk of "voluntary" or "involuntary" default by the borrower that raises the required rate of interest on loans above the borrower's risk associated with the prospective yield of an asset (p. 144); and, lastly, of what Keynes refers to as

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the casino-like character of *modern* financial markets pummeled by unmoored, psychologically driven "waves of optimistic and pessimistic sentiment" (p. 154). For Keynes, the "fetish for liquidity," lenders' risk, and perverse financial markets reflect uncertainty-generated market failures that, as Garrison emphasizes, are beyond resolution given prevailing institutional arrangements. So what did Keynes recommend?

Aside from his suggestion that State policy should be directed at more nearly equalizing income differences,[3] Keynes argues for policies he claims would result in a "state of full investment in the sense that an aggregate gross yield in excess of replacement cost could no longer be expected . . . from a further increment of durable goods" (p. 324). But attaining a rate of investment that would reduce the marginal efficiency of capital close to zero is not possible unless the interest rate can be driven to nearly zero or investment outlays maintained at a high enough level to push the MEC to nearly zero. To solve this problem, Keynes calls upon the State—public and quasi-public agencies—to ensure that the volume of investment maintains a rate consistent with full employment. For Keynes, the State is singularly equipped to overcome macroeconomic market failure by internalizing the social costs of uncertainty via its control of the scale of investment outlays.

The kinds of institutional rearranging that Keynes calls for is premised upon the existence in the market economy of "Keynesian maladies." These can be, and (if Keynes had his druthers) ought to be, analyzable by economic reasoning. In part, this is precisely what *Time and Money* sets out to do, and it achieves that objective brilliantly with its "six-panel graphs" and the analytical clarity and tightness of its prose. Garrison's treatment of Keynes (but the same thing could be said about the other main parts of the book) and the effects on labor, commodity, and loanable funds markets of "the fetish for liquidity," "a collapse in the MEC," and other Keynesian maladies, capture with great effectiveness the various "before" and "after" situations germane to Keynes's economics.

Keynes, Garrison, and Expectations

According to Garrison, defenders of Austrian business cycle theory are sometimes challenged by critics who ask the "rhetorical question: 'What about expectations?'—hence the impish tone with which it is posed" (p. 17). Garrison deflects this challenge from the "imps," as he calls them, by claiming the context of the question is itself "wholly anachronistic" because modern treatments of expectations emerged from Keynesianism and "cannot simply be

[3]But Keynes accedes to "social and psychological justification for significant inequalities of incomes and wealth, but not for such large disparities as exist to-day" (1936, p. 374).

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grafted onto the Austrian theory, whose origins predate Keynes" (p. 18). Aside from rejecting these "modern treatments" (in particular, rational expectations), Garrison wants to shift the emphasis of macroeconomics back toward capital theory and away from expectations. According to Garrison, however, the analysis of the intertemporal capital structure cannot be unhooked from expectations because the structure itself is necessarily a reflection of the plans and expectations of entrepreneurs. In effect, the intertemporal structure of capital provides the relevant context for considering expectations.

As Garrison emphasizes in chapter 2, the "Lachmann Problem" reminds us that the passage of time and changes in knowledge (and, hence, expectations) go together. In *Time and Money*, expectations are reflected in "time markets"—the loanable funds market and in the plans upon which the capital structure is based. In equilibrium, expectations are fixed. When the system is disturbed, let us say by central bank policy, the attempt of agents to execute their plans and reformulate them implies various adjustments and readjustments throughout the system; the system starts from an initial equilibrium position and ends up back at that equilibrium position. The changes that must occur in the model and that are necessitated by the model's assumptions require that agents' actions are constrained by the underlying economic realities and by expectations that are kept in line with those realities. For Garrison there are certain "understandings" (p. 26) about expectations implicit in Austrian theory: first, entrepreneurs act in the face of uncertainty; second, changing prices convey relevant characteristics about changes in underlying realities; and third, prices tend to promote the coordination of economic decisions.

Now, these "understandings" are indeed altogether sensible and seem to squarely capture salient aspects concerning action through time (that is, expectations) that most Austrians ought to find agreeable. By establishing the relevant context of decision making and the role of the price system in conveying knowledge and coordinating plans, expectations are endogenized and in the end are reflected in coordinated plans as required by the nexus of equilibrium outcomes implied by the model. As the system moves from one equilibrium to the next, "everything works out" in the sense that expectations are satisfied and all markets "clear" (even though in the labor-based case the system settles into an unemployment equilibrium). Expectations cannot behave in ways apart from the general constraints implied by the prior "understandings." In effect, expectations are "reasonable" because they are assumed to "facilitate the coordination of economic decisions" (p. 26). A violation of this assumption, Garrison notes, "implies a denial that the market is a viable solution" (p. 26). These "understandings," however, are theoretical conjectures that do not command universal assent and, hence, are themselves areas of controversy among economists. In particular, as noted earlier, Keynes held

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that long-term expectations are liable to change through time and to do so unpredictably and uncontrollably. They are unhooked from the market process. Keynes, in effect, denies the assumptions Garrison postulates about expectations. And this denial is precisely the problem for economic analysis that Keynes's views pose.

Keynes is quite insistent that he wishes to generate a model of a monetary economy in which "changing views about the future are capable of influencing the quantity of employment and not merely its direction" (p. vii), an indication of his interest in questions concerning "historical time." Recognition of this facet about Keynes has, as might be expected, resulted in various attempts to more completely dynamize Keynes's theories. For example, Kregel (1976), a leading post-Keynesian, claims that two distinct models appear in *The General Theory*: the theory of stationary equilibrium and the theory of shifting equilibrium. According to this reading, these models are characterized by different assumptions concerning "short-period" and "long-term" expectations. Keynes's "stationary equilibrium" assumes the state of long-term expectation is constant, but allows for disappointment in short-period expectations, which Keynes claims are hooked into realized outcomes (1936, p. 47), making them relevant to entrepreneurial decisions for the current period. In addition, although Keynes's stationary model does not preclude the attainment of full employment via a trial-and-error method of decisionmaking by entrepreneurs, the "wrong" state of long-term expectations and other potential problems make full employment improbable and accidental.

Alongside and intermingled with this set-up, Keynes also mentions–it seems almost in passing–something he calls "shifting equilibrium": "the theory of a system in which changing views about the future are capable of influencing the present situation" (p. 293). A direct application of this notion is that changes in long-term expectations will also affect short-term expectations and thus have the capacity to affect current production and employment decisions, financial markets, interest rates, and hoarding in ways that, according to Keynes, are likely to be socially undesirable. The idea of "shifting equilibrium" conveniently allows Keynes to transfer the results of his theoretical apparatus, largely gained from stationary analysis, to a historical-time (and path-dependent) context. This procedure accomplishes two important objectives: first, it supports Keynes's call for an economics of the real (that is, calendar-time) world as opposed to theories "where all things are foreseen from the beginning" (p. 293); and second, it is used to fortify Keynes's claim that for extended periods of calendar time the market economy is incapable of operating at full employment. At any moment, the system will be in equilibrium at less than full employment, and, as it moves through historical time, it will remain roughly in that state of slump.

The salient feature of Keynes's use of "shifting equilibrium" is that long-term expectations are assumed exogenous. This means, as Garrison and others

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have noted, that the "state of long-term expectation" is a free parameter in the model and that it plays a role in *The General Theory* akin to a "wild card"—something to be invoked at the theorist's pleasure and used in the model as those occasions warrant. A model "in time" (as Hicks might describe it) has been constructed, but it is one in which "uncertainty of the future" is used to manufacture a particular result. Thus, while Keynes's model might appear to provide a comfortable nesting place for expectations in general and on that account gives his treatment of expectations an aura of credibility, the particular way Keynes treats and uses expectations is analytically unsatisfying, if not idiosyncratic.

In *Time and Money*, changes in expectations find appropriate proxies within Garrison's construction that allow their implications to be traced through the various "panels" connecting the loan, output, and labor markets. The model is adept at handling "if this, then that" propositions concerning Keynes-type expectational assumptions, and it does so in ways that are more illuminating and coherent than other macro models, including Keynes's. The text in *Time and Money* adds substance and much interesting detail to the analytical superstructure, extending its relevance and applicability to the real world, and it does so in a way that does not stray far from the constraints provided by the model. Thus, while both Keynes and Garrison generally work within the context of an analytical framework, they also both move outside their models in ways that interest us, although each interprets the acceptable range of that latitude quite differently.

For Keynes, long-term expectations are literally beyond the pale and have no necessary or systematic connection to the market process that they so severely affect.[4] This has the effect, ironically, of removing Keynesian-type expectations from the purview of economics and relocating them elsewhere. Keynes, in effect, does not accept Garrison's assumptions. Consequently, Garrison's framework, though entirely adequate in examining the *implications* of Keynes's expectations, cannot ascertain their theoretical legitimacy or the extent to which they are empirically relevant.[5] Is it the case, then, that Austrian macroeconomics has no systematic basis for rejecting Keynes's theory of expectations? Should one counter Keynes's assertion that expectations

[4]Keynes actually admits this when he says near the end of chapter 12 ("The State of Long-Term Expectation) in *The General Theory*: "We should not conclude from this that everything depends on waves of *irrational* psychology" (p. 162, italics added).

[5]Garrison's model in chapter 8 ("Cyclical Unemployment and Policy Prescription") shows that the Keynesian malady of a collapse in the MEC cannot be remediated by a flexible wage rate, which, Garrison maintains, "will only partially eliminate the immediate problem of unemployment while contributing nothing—and even forestalling—a solution to the root problem, the collapse in investment demand" (p. 150). Here, Keynes-type expectations trump the system's coordinating mechanisms.

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can and are likely to be perverse, and if so, how? If the preference and comparative advantage of economists is to mend their *own* fences, the ways Austrian macroeconomics might address "the Keynes challenge" emerges as a significant and, as of now, open-ended question. Although various strategies to address such concerns might be suggested, it seems that in this area the kinds of differences separating Keynes (and his followers) from the Austrians may be extremely difficult to reconcile.[6] If so, Austrians may well find it necessary and useful to pursue a complementary tack by framing questions in ways that facilitate empirical analysis and testing, broadly understood.[7] Keynesians may want to insist that expectations are fragile and volatile, but that does not explain the reasons or circumstances under which that might be the case, or, perhaps more importantly, the degree of their fragility. Important aspects of these questions seem approachable from historical and empirical analysis, and such means may be one of the few ways these difficult questions can be addressed. This may be especially the case when serious researchers start from incompatible assumptions in their economics.

Conclusion

Time and Money provides a highly effective platform from which to consider macroeconomic theory, and its capacity to service the needs of comparative macroeconomic analysis is an important contribution in its own right. The book will be important for the development of Austrian economics because it identifies important questions and provides sensible answers to the questions it analyzes. Although not discussed at length in these remarks, the framework contained in *Time and Money* is receptive to the extension of Austrian economics, especially with respect to monetary disequilibrium theory and to comparative institutional analysis. The impetus Garrison's book provides for the wider acceptance and extension of capital-based macroeconomics will be carried out both at the level of theory and, one hopes, at the empirical level as well.

References

Burczak, Theodore A. 2001. "Profit Expectations and Confidence: Some Unresolved Issues in the Austrian-Post-Keynesian Debate." *Review of Political Economy* 13(1): 59-80.

[6]Many of these differences concern epistemological and methodological issues, which, if nothing else, are notoriously unresolvable to the satisfaction of both parties. For example, the reactions to Butos and Koppl (1997) by post-Keynesians (Burczak 2001; Carabelli and DeVecchio 2001) give a sense of the degree of these differences.

[7]Empirical analysis is multi-dimensional. Garrison's chapter on "Risk, Debt, and Bubbles" is an excellent example.

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ELECTRONIC REPRODUCTION PROHIBITED

Butos, William N., and Roger G. Koppl. 1997. "The Varieties of Subjectivism: Keynes and Hayek on Expectations." *History of Political Economy* 29(2): 303-29.

Caldwell, Bruce J., and Stephan Boehm, eds. 1992. *Austrian Economics: Tensions and New Directions.* Boston: Kluwer.

Carabelli, Anna, and Nicolo De Vecchi. 2001. "Hayek and Keynes: From a Common Critique of Economic Method to Different Theories of Expectations." *Review of Political Economy* 29(3): 269-85.

Garrison, Roger W. 1986. "From Lachmann to Lucas: On Institutions, Expectations, and Equilibrating Tendencies." In *Subjectivism, Intelligibility, and Economic Understanding.* Israel M. Kirzner, ed. New York: New York University Press. Pp. 87-101.

——. 2001. *Time and Money: The Macroeconomics of Capital Structure.* New York: Routledge.

Hayek, F.A. 1935. *Prices and Production.* 2nd ed. London: Routledge.

Horwitz, Steven. 2000. *Microfoundations and Macroeconomics: An Austrian Approach.* New York: Routledge.

Keynes, John Maynard. 1936. *The General Theory of Employment, Interest, and Money.* New York: Harcourt, Brace and World.

——. 1973. *The Collected Writings of John Maynard Keynes.* Vol. 13. *The General Theory and After: Part I: Preparation.* D. Moggridge, ed. London: Macmillan and St. Martin's Press for the Royal Economic Society.

——. 1980. *The Collected Writings of John Maynard Keynes.* Vol. 27. *Activities 1940-1946, Shaping the Post-War World: Employment and Commodities.* D. Moggridge, ed. London: Macmillan and St. Martin's Press for the Royal Economic Society.

Kregel, Jan. 1976. "Economic Methodology in the Face of Uncertainty: The Modeling Methods of Keynes and the Post-Keynesians." *Economic Journal* 86(342): 209-25.

Meltzer, Allan H. 1988. *Keynes's Monetary Theory: A Different Interpretation.* New York: Cambridge University Press.

Rizzo, Mario J. 1992. "Afterword: Austrian Economics for the Twenty-First Century." In Caldwell and Boehm, eds. (1992). Pp. 245-55.

White, Lawrence H. 1992. "Afterword: Appraising Austrian Economics: Contentions and Misdirections." In Caldwell and Boehm, eds. Pp. 257-68.

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CAPITAL-BASED MACROECONOMICS: RECENT DEVELOPMENTS AND EXTENSIONS OF AUSTRIAN BUSINESS CYCLE THEORY

JOHN P. COCHRAN

The business cycle theory of Hayek and the macroeconomic models of John Maynard Keynes were the two major rivals in the 1930s. From the 1940s to the late 1970s, however, the framework developed by Keynes in *The General Theory of Employment, Interest, and Money* dominated economic policy and pedagogy, despite logical and theoretical problems with the model. Much of the success of the Keynesian approach within the profession was due to the follow-up developments by Sir John Hicks (1967b) and Paul Samuelson (1948). These economists developed simple graphical presentations (the IS-LM model and the Keynesian Cross) that made it easy for economists to grasp the implications of the theory, to extend and develop the theory, and to use the theory for historical analysis and policy applications. Most important, the simplifications provided a pedagogy for teaching the Keynesian model to new students of economics.

Hayek's business cycle model–which was partially responsible for his winning the Nobel Prize in economics in 1974–was temporarily abandoned, not because it was wrong, but partly because, as Hicks (1967c, p. 204) has argued, while the writings of Hayek and Mises on business cycle theory were in English, they were not English economics, and partly because the model was too complex. The current neglect or downplaying of Austrian insights by mainstream economists can be attributed to similar factors, most recently expressed by Yeager (1997) and Wagner (1999). The inability to effectively communicate Austrian insights is compounded by the fact that publication of papers with Austrian or capital-based macroeconomic themes have, in general,

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been limited to special volumes, such as Keizer et al. (1997); to journals devoted to the history of economic thought, such as Garrison (1985) and Cochran and Glahe (1994) in *History of Political Economy*; to journals published by think tanks, such as, *Cato Journal* (Garrison 1986, 1992) and *Independent Review* (Garrison 1999; Hülsmann 2000; or Selgin 2000); or to multidisciplinary journals such as *Critical Review* (Garrison 1994).[1] Recent developments in Austrian business cycle theory have been greatly accelerated by publishing opportunities opened up in newer journals devoted to the advancement of Austrian economics, particularly the *Review of Austrian Economics,* and more recently the *Quarterly Journal of Austrian Economics.*

Despite these recent advances and clarifications, the Mises-Hayek model has, however, had no equivalent model or framework to compare to the IS-LM or Keynesian Cross framework. Hayek's attempt to further develop his more complex theory resulted in the publication of *The Pure Theory of Capital.* This book is over 500 pages long and was only a preliminary for "further investigations of the dynamic phenomena of business cycles" (1975, back cover). Hayek never completed a promised second volume of at least equal length to fully develop his model. The great complexity of the capital and monetary issues has caused many others who have attempted the project to also abandon it.

Professor Garrison's *Time and Money* fills in the gaps. In the book, Garrison finishes Hayek's project, not by trying to make the model as complex as issues of time and money might suggest, but by combining a simpler model, the "intertemporal structure of production," with two standard principles-level models–the production possibilities frontier and the loanable funds market–to develop a comprehensive framework for exploring the operations of an economy in time.

One of Professor Garrison's key developments is his capital-based macroeconomics model which he uses to address the fundamental question facing macroeconomic policymakers today: Can economic growth be maintained? If so, how? If not, why not? Such questions have been of interest to economists since the early developments of classical economics, as evidenced by the title of Smith's great work, *An Inquiry Into the Nature and Causes of the Wealth of Nations.* In a capital-based macroeconomics, sustainable growth occurs because investment exceeds depreciation and all investment is financed by available saving (pp. 63-67). Growth is sustainable because it is consistent with tastes and preferences and resources availability. Regardless of its actual rate, such growth should be of no concern to monetary policymakers, particularly those concerned with accelerating inflation. Sustainable growth in a sound money environment or under a policy regime following a productivity

[1]For a symposium on publishing in Austrian economics, see the *Quarterly Journal of Austrian Economics* volumes 1, 2, and 3 (2000).

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norm should be accompanied by declining prices. In the Garrison model, sustainable growth is represented by a continuous outward shift of the production possibility frontier (PPF) and a loanable funds market in equilibrium. In the equilibrium business cycle literature, such growth is often referred to as balanced growth (output, investment, and consumption all growing at the same rate).

Growth becomes unsustainable when it is not consistent with underlying tastes and preferences and resource availability. As such, it must be policy-induced, not preference-induced growth. While Garrison (p. 76) presents three possible scenarios–a transfer expansion, a credit and transfer or neutral expansion, and a credit expansion–the most relevant is the credit expansion. The credit expansion is the familiar Mises-Hayek Austrian business cycle theory. If the economy is at full employment when a credit expansion begins, unsustainable growth occurs as the economy begins to produce outside its PPF and the mix of output shifts toward investment without a corresponding change in time preference. The same phenomenon could occur during a recovery (a movement from inside the PPF to a point on the frontier) if, because of credit creation, the investment-consumption balance is not consistent with underlying time preferences. The capital-based macro model explains the interactions between money, credit, and investment that set up conditions for unsustainable growth, as illustrated by what I refer to as "dueling production structures" (Fig. 4.4, p. 69). Consumer's preferences are pulling resources into a shorter structure of production, while the credit expansion is attempting to attract resources to support an alternative longer production structure. The resource base is not sufficient to allow completion of both structures simultaneously.

Garrison shows that the capital-based macroeconomic model is, thus, well-suited to bridge the gap between the short run and the long run. The model can explain seamlessly the long-run growth trend (and changes in the trend), fluctuations around the trend (cycle phenomena), and the associated greater variability in investment relative to total output and consumption that is consistently picked up in economic data series. In addition, the capital-based approach of the Austrian theory avoids the empirical irregularities associated with the movements in the real wage over the business cycle that haunt the labor-based approach of Friedman; it also can explain why demand-side policy shocks, even during periods of recession and recovery, are destabilizing (Mises 1998, pp. 576 and 792).[2]

[2]Vedder and Gallaway (2000) provide empirical evidence that, historically, countercyclical policy has in fact been destabilizing. Hayek (1975) also shows theoretically why a monetary expansion that begins not at full employment but during a recession, leads to a cycle.

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Garrison's exercises in comparative frameworks are also quite illuminating with regard to other current policy concerns. Are recessions the result of excessive central bank tightening–a pluck as illustrated by using a stylized form of the Friedman (1993, Fig. 1, p. 174) plucking model? The usual interpretation of U.S. growth data in a plucking model is that "U.S. data on real output show an important 'ceiling' effect; growth rates are on average below the ceiling rate, but tend back to the ceiling rate" (Goodwin and Sweeney 1993, p. 178). Why does such a pattern appear in the data? While a monetarist-monetary disequilibrium model can be used to explain the observed business cycle phenomena, the Austrian model can also provide a plausible explanation of the observed pattern as developed by Garrison (2001, pp. 220-24).[3]

In the monetarist model, *natural* full-employment growth is interrupted by monetary disequilibrium, and the "money string is plucked downward" (Friedman 1993, p. 173). These plucks are interpreted as random policy errors that decrease the supply of money or fail to increase it in response to an increased demand for money. The resulting excess demand for money, coupled with price rigidity, triggers a recession followed by a subsequent recovery that may or may not be aided by an expansionary policy.

In the Austrian model, the problem develops as an investment boom. As previously argued, investment generated by savings is sustainable, while investment generated by credit creation is not.

> The boom for the Austrians refers to something going on largely within the output aggregate. It is represented in Friedman's plucking model not by a conspicuous recovery to trend but rather by some period preceding a pluck which Friedman, operating at a higher level of aggregation, presumes to be healthy growth. (Garrison 1996, p. 800)

The credit-induced part of the boom or recovery, however, is malinvestment and not sustainable growth (pp. 224-29).

Garrison reemphasizes that the self-reversing effects of a money-credit injection exist even if the monetary increase occurs when unemployed resources already exist. The final outcome of the process may be delayed, but it does not change. An increased supply of money credit granted to entrepreneurs will initially stimulate investment relative to consumption (and in excess of investment levels consistent with underlying time preference). If there are available stocks of all resources–including consumer goods, as often may be the case when an economy is inside its production possibility frontier–the idle resources may be absorbed temporally, and the process may continue

[3]While the Austrian model can be adapted to this interpretation of the data, fluctuations below a growth ceiling, the Austrian cycle is more consistent with fluctuations above and below a sustainable trend line (Garrison 2001, pp. 247-50).

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unimpeded for some time. Costs need not rise since newly employed resources do not have to be bid away from alternative uses. The increased money incomes of input owners need not cause the price of consumer goods to increase if the additional consumer goods can be supplied from stocks. The Keynesian multiplier process may reasonably describe the initial phases of such a recovery. This multiplier process, however, essentially describes a process where no real scarcities exist, an "economics of abundance" (Hayek 1941, pp. 369-74). But when scarcities reassert themselves, bottlenecks develop. The crisis will again be upon the economy. While the downturn may appear to be the result of a pluck (a central bank- or banking sector-induced restriction in credit availability), more careful analysis makes it clear that a "policy-induced boom contains the seeds of its own undoing" (Garrison 1996, p. 800).

Garrison's analysis can be extended to a criticism of real business cycle theory. The empirical results presented in the real business cycle literature can be used as an exercise in "interpretive economic history" (Higgs 1995) to illustrate the relevance of Austrian business cycle theory. Real business cycle theorists see the pattern of expansion and contraction present in economic data as the economy's response to exogenous productivity shocks. These "modern theories of business cycles attribute cyclical fluctuations to cumulative shocks and disturbances that continually buffet the economy. In other words, without shocks there are no cycles" (Chatterjee 2000, p. 1). Money and central bank policy are largely irrelevant with respect to economic expansions and downturns. But, while policy errors do not cause downturns, countercyclical policies are counterproductive; they entail costs in excess of benefits (Prescott 1986, p. 21; Chatterjee 1999, p. 18).

The real business cycle model regards fluctuations in factor productivity as the major source of fluctuations in economic activity. These fluctuations in total factor productivity, "the effectiveness with which workers and machinery generate value-added" (Chatterjee 1999, p. 19), are usually identified with the "Solow residual." The Solow residual is developed by modeling an economy with competitive markets and constant returns to scale, using an aggregate production function of the form $Q = Af(K,N)$, where A, the Solow residual, is a shift parameter representing exogenous technical progress or a productivity shock, K is a measure of the capital stock, and N is a measure of labor input (Lewin 1999, p. 76).[4] Proponents conclude that the model can account for

[4]The model can also be presented in growth terms as is done by Stadler (1994, p. 1752), $q = \alpha n = (1-\alpha)k + z$, where q is the growth rate of output, n is the growth rate of the labor supply, k is the growth rate of the capital stock, and z is "growth that cannot be accounted for by growth in labor or capital, . . . multi-factor productivity growth . . . that has been dubbed the 'Solow residual'."

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about 70 percent of the postwar business cycle phenomenon (Kyland and Prescott 1991). But critics contend there is "no independent corroborating evidence for the large technology shocks that are assumed to drive business cycles" (Stadler 1994, p. 1751).

While one should not deny that fluctuations in key aggregates may be the result of agents' responses to exogenous shocks, one should expect historical studies would be able to identify the shocks. A capital-based macroeconomic model provides some possible answers. What is identified as a technology shock in the highly aggregated production function model may be better modeled in an Austrian capital framework as a change in the structure of production. The explanation relies on a lower level of aggregation (pp. 224-29). If the above specified production function is incomplete, if it fails to identify all relevant inputs, then the shift factor *A* picks up the effects of the unidentified or omitted inputs. "Identifying and talking about them renders them "endogenous" (Lewin 1999, p. 76). Clearly, from an Austrian perspective, such a production function is incomplete. If capital is viewed as a structure, there is at any point in time not just one technology known by all and used by all, but a multiple of technologies either in use or available for use. Time preference and available saving limits not only the amount of investment, but also the type of capital goods and technologies invested in.[5] With high time preferences and limited saving, investments are, in general, production plans to meet more immediate needs. Investment projects are shorter, less labor-saving, and less durable. The complex combination of resources that makes up the structure of production is less productive. With lower time preferences, production plans provide for greater future provision. Investment projects are, on average, longer, more labor-saving, and more durable. In broad aggregate measures the results of such investment choices should show up as increased total factor productivity, the "shock factor" in the real business cycle literature.

At a lower level of aggregation, what looks like an economy's response to a "positive technology" shock may be in fact an economy's response to credit creation. The productivity increase is, in reality, endogenous. Or it could be a combined response; the economy is subjected to a truly exogenous productivity shock in new knowledge or improved production techniques. The greater potential productivity of new investment projects of all types increases the demand for credit, but the higher demand for credit is partially accommodated by credit creation. In either case, the economy-wide response will be a combination of sustainable and unsustainable growth. Part of the expansion

[5]Lewin (1999), Lachmann (1956), and Cochran and Glahe (1999, pp. 107-10) provide more in-depth discussions. The Austrian framework also makes clear the strong link between investment and technological change. New knowledge cannot affect production until there is investment in new capital goods that make use of the new knowledge.

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of investment during the response period will be malinvestment. As the malinvestments are discovered and corrected, the production structure will shorten, productivity will decline, and the aggregate data picks up a negative productivity shock. The money and credit creation during the expansion, rather than being a harmless endogenous response of banks to changing market conditions, sets the stage for the boom-bust pattern of the cycle.

Garrison (2001, pp. 1-5) argues that a key feature of capital-based macroeconomics is that it provides the macroeconomics of the medium run. The Austrian theories of capital and credit creation theoretically separate sustainable from unsustainable growth. The long run is the series of short-run adjustments. The Austrian model thus provides a single model of the short run, the medium run, and the long run. While business cycle phenomena may be caused by exogenous shocks or inappropriately tight monetary policy, much of the actual cyclical activity is best interpreted as the consequence of and caused by credit-created unsustainable growth. This type of cyclical activity is preventable with an appropriate monetary framework but may be difficult to correct with short-run macroeconomic policy. A monetary policy based on the principle of sound–not stable–money would accommodate sustainable growth without generating endogenous instabilities and unsustainable growth.

While Garrison provides a clear explanation of business cycle phenomena, his work extends the analysis beyond the traditional focus of the cycle and provides a platform for future research. Chapters 5 and 6 use the basic capital-based macroeconomic model to develop preliminary Austrian insights on other important macroeconomic topics such as budget deficit, tax reform, risk and bubbles, and the boom-and-bust cycle in developing nations. Chapter 9, "Secular Unemployment and Social Reform," presents a novel and correct interpretation of Keynes. And as illustrated above, Garrison provides a new and very useful framework for comparing competing and complementary macroeconomic theories. Most important, Garrison's graphics provide a pedagogy that is useful from a principles level to a graduate level of instruction.

To place the importance of the book in a broader context, Brian Snowden, Howard Vane, and Peter Wynarczyk (1994, p. 351) recognize that Austrian (capital-based) macroeconomics offers "important insights and alternatives to mainstream macroeconomics." They argue the approach is one that has witnessed a major sustained revival of its fortunes during the past twenty years, due to the "commitment and tenacity of Mises and Hayek" and from the "contributions of a new generation of Austrian economists." Professor Garrison's work in Austrian macroeconomics over the past twenty-plus years has been among the most influential of these new contributions. *Time and Money* and its detailed development of a capital-based macroeconomics is the most important of these recent developments. The capital-based approach has the

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advantage of providing a seamless macroeconomics of the short run, the medium run, and the long run, particularly when compared to current mainstream analysis, which lacks a medium run and has long-run and short-run models that are often in conflict. Cochran and Glahe (1999, p. 196) argue that it is only with a "greater understanding of the forces actually shaping events in a monetary production economy that we can make rational decisions about policy and monetary institutions." *Time and Money* is certainly a major contribution to our further understanding of these complex market processes.

References

Chatterjee, Satyajit. 1999. "Real Business Cycles: A Legacy of Countercyclical Policies?" Federal Reserve Bank of Philadelphia *Business Review* (January-February): 17-27.

——. 2000. "From Cycles to Shocks: Progress in Business Cycle Theory." Federal Reserve Bank of Philadelphia *Business Review* (March): 1-11.

Cochran, John P., and Fred R. Glahe. 1994. "The Keynes-Hayek Debate: Lessons for Contemporary Business Cycle Theorists." *History of Political Economy* 26(1): 69-94.

——. 1999. *The Hayek-Keynes Debate: Lessons for Current Business Cycle Research.* Lewiston, N.Y.: Edwin Mellen Press.

Friedman, Milton. 1993. "The 'Plucking Model' of Business Fluctuations Revisited." *Economic Inquiry* 31 (April): 171-77.

Garrison, Roger W. 1985. "Intertemporal Coordination and the Invisible Hand: An Austrian Perspective on the Keynesian Vision." *History of Political Economy* 17(2): 309-21.

——. 1986. "The Hayekian Trade Cycle Theory: A Reappraisal." *Cato Journal* 6(2): 437-53.

——. 1992. "The Limits of Macroeconomics." *Cato Journal* 12(1): 165-78.

——. 1994. "The Roaring Twenties and the Bullish Eighties: The Role of Government in Boom and Bust." *Critical Review* 7(2/3): 257-76.

——. 1996. "Friedman's 'Plucking Model': Comment." *Economic Inquiry* 34 (October): 799-802.

——. 1999. "The Great Depression Revisited." *Independent Review* 39(4): 595-603.

——. 2001. *Time and Money: The Macroeconomics of Capital Structure.* London: Routledge.

Goodwin, Thomas H., and Richard J. Sweeney. "International Evidence on Friedman's Theory of the Business Cycle." *Economic Inquiry* 31 (April): 178-93.

Hayek, Friedrich A. [1939] 1975. *Profits, Interest, and Investment and Other Essays on the Theory of Industrial Fluctuations.* Clifton, N.J.: Augustus M. Kelley.

LICENSED TO UNZ.ORG
ELECTRONIC REPRODUCTION PROHIBITED

——. [1941] 1975. *The Pure Theory of Capital.* Chicago: University of Chicago Press.

Hicks, Sir John. 1967a. *Critical Essays in Monetary Theory.* Oxford: Clarendon Press.

——. [1937] 1967b. "Mr. Keynes and the Classics." *Econometrica* 5(2). Reprinted in Hicks 1967a. Pp. 126-42.

——. 1967c. "The Hayek Story." In Hicks 1967a. Pp. 203-15.

Higgs, Robert. 1995. "Austrian Economics and The New Economic History." *Austrian Economics Newsletter* (Summer): 2-3.

Hülsmann, Jörg Guido. 2000. "Banks Cannot Create Money." *Independent Review* 5(1): 101-10.

Keizer, Willem, Bert Tieben, and Rudy van Zijp, eds. 1997. *Austrian Economics in Debate.* London: Routledge.

Kydland, Finn E., and Edward C. Prescott. 1991. "Hours and Employment Variation in Business Cycle Theory." *Economic Theory* 1:63-81.

Lachmann, Ludwig. [1956] 1978. *Capital and Its Structure.* Kansas City: Sheed Andrews and McNeel.

Lewin, Peter. 1999. *Capital in Disequilibrium: The Role of Capital in a Changing World.* London: Routledge.

Mises, Ludwig von. [1949] 1998. *Human Action: A Treatise on Economics.* Scholar's Edition. Auburn, Ala.: Ludwig von Mises Institute.

Prescott, Edward C. 1986. "Theory Ahead of Business Cycle Measurement." Federal Reserve Bank of Minneapolis *Quarterly Review* 10:9-21.

Samuelson, Paul A. 1948. *Economics: An Introductory Analysis.* New York: McGraw-Hill.

Selgin, George. 2000. "Should We Let Banks Create Money?" *Independent Review* 5(1): 93-100.

Snowden, Brian, Howard Vane, and Peter Wynarczyk. 1994. *A Modern Guide to Macroeconomics: An Introduction to Competing Schools of Thought.* Cheltenham, U.K.: Edward Elgar.

Stadler, George W. 1994. "Real Business Cycles." *Journal of Economic Literature* 32 (December): 1750-83.

Vedder, Richard K., and Lowell E. Gallaway. 2000. "The Fraud of Macroeconomic Stabilization Policy." *Quarterly Journal of Austrian Economics* 3(3): 19-33.

Wagner, Richard. 1999. "Austrian Cycle Theory: Saving the Wheat while Discarding the Chaff." *Review of Austrian Economics* 12:65-80.

Yeager, Leland. [1986] 1997. "The Significance of Monetary Disequilibrium." *Cato Journal* 6 (Fall): 369-95. Reprinted in *The Fluttering Veil: Essays on Monetary Disequilibrium.* George Selin, ed. Indianapolis, Ind.: Liberty Fund.

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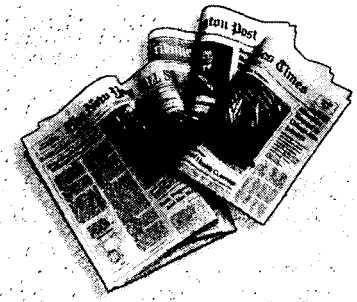

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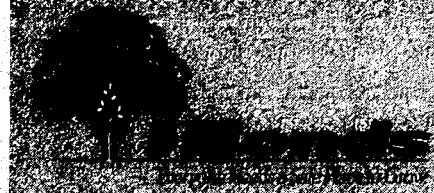

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THE TWO CONTRIBUTIONS OF GARRISON'S *TIME AND MONEY*

RANDALL G. HOLCOMBE

Prior to 1940, the Austrian School was known primarily for its contributions to monetary theory and business cycle research—later to be renamed macroeconomics—based on the work of Mises and especially Hayek. By 1950, the Keynesian revolution had completely displaced all other approaches to macroeconomics, and with both Mises and Hayek turning their work in other directions, the Austrian School became identified primarily with its claims that central economic planning precluded rational economic calculation. While some work has been done in Austrian macroeconomics since World War II, the bulk of the school's work has been in microeconomics. The macroeconomics that has been done has not made any significant advances on the Austrian trade cycle theory that the school was best known for in the 1930s. Garrison's *Time and Money* remedies that by picking up where Hayek left off, developing a macroeconomic model based on Austrian capital theory that provides significant insights into macroeconomic phenomena.

My title here is slightly misleading: how does one count contributions? In one sense, Garrison's *Time and Money* makes many more than two contributions, but in another way, maybe the whole book should just count as one contribution. The two contributions referred to in the title here are the book's contributions to macroeconomics and to Austrian economics, which are sufficiently distinct that they can be counted separately.

CAPITAL-BASED MACROECONOMICS

From a macroeconomic standpoint, the major, and fundamentally important, contribution of *Time and Money* is to show the necessity of taking into account the heterogeneous nature of capital in macroeconomic analysis.

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Garrison begins where Hayek (1928, 1935) left off, basing his model on Hayek's idea of a structure of production that extends from earlier stages to later stages, with different types of capital being specific to different stages. Hayek and Garrison then show how changes in the market for loanable funds leads to capital restructuring, and how changes emanating from some sources can lead to unsustainable capital structures that will inevitably require a later correction. Such changes lead to macroeconomic fluctuations. The downswings in these fluctuations are now called recessions; prior to Keynes (1936), the entire movement of upswings and downswings was studied together as the business cycle, or trade cycle.

Among the many differences between Keynes's analysis of macroeconomic fluctuations and Hayek's was that Keynes lumped all investment together whereas for Hayek, the capital structure and the investment that created it was heterogeneous, and the heterogeneity of capital was an important underlying factor in the cause of economic downturns. With the Keynesian revolution, macroeconomics consistently modeled capital as a homogeneous K, and Hayek's trade cycle theory was relegated to being viewed as an episode in the history of economics. From a historical standpoint, Garrison's *Time and Money* rehabilitates Hayek's theory of the trade cycle; but more importantly, from a theoretical standpoint, Garrison shows why one cannot fully understand the nature of macroeconomic fluctuations without taking into account the heterogeneous nature of capital.

Garrison's foundation is purely Hayekian in the way that he depicts the capital structure, but he then places Hayek's model of heterogeneous capital within a macroeconomic framework that will be familiar to any contemporary economist. The result is a significant advance beyond the Austrian business-cycle models of the 1930s. It is an advance partly because Garrison presents his analysis in a consistent and contemporary framework, making it easily understandable to the current generation of macroeconomists, and partly because he illustrates so clearly how the fact that capital is heterogeneous affects macroeconomic phenomena. Garrison then goes on to exercise the model to show how various changes in macroeconomic conditions affect the macroeconomy, and insightfully compares his model with the Keynesian and monetarist ideas that dominated macroeconomics from the 1940s until very recently.

Garrison's model is simple, and part of its virtue lies in that fact. Because it is easy to follow, and because it is built along the lines of the most basic contemporary macro models, it convincingly shows the importance of heterogeneous capital to the understanding of macroeconomic phenomena. In one sense, it differs significantly from the increasingly mathematical contemporary macroeconomics, but in another sense, it is right at home because its basic elements–except for the all-important Hayekian capital structure–are

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consistent with the most elementary of contemporary macroeconomic frameworks. By looking at Garrison's construction, one can see immediately that the incorporation of heterogeneous capital into the model is essential, and one can see immediately what it adds, and why. In this sense, the simple framework is an asset. It shows as plainly as possible the most important thing that Garrison has to offer contemporary macroeconomics: the significance of capital heterogeneity to the understanding of macroeconomic phenomena.

The Austrian School

Garrison's contributions to Austrian economics can be subdivided into what he has added to Austrian macroeconomics and what he has contributed to the Austrian School more generally. In the 1930s, Hayek and Keynes were the world's two most prominent authorities on macroeconomic issues. However, as noted earlier, Austrian business cycle theory had been relegated to a component of the history of economic ideas by the Keynesian revolution. Few macroeconomists today know much if anything about Hayek's business cycle theory, thinking it to be discredited and irrelevant to macroeconomic theorizing. In some ways, Hayek's work is irrelevant, even though his ideas are not. His business cycle work was written before the Keynesian revolution, before macroeconomics was recognized by that name, and before many of the current conventions of thinking about macroeconomic ideas were developed. Thus, Hayek's ideas do not sound current, and do not fit comfortably within the bounds of current macroeconomic thinking. The same could be said of Keynes's *General Theory*, but Keynes has had the advantage that generations of economists after him have continued to refine and modernize his ideas. Now, finally, someone has done the same thing for Hayek's ideas.

Garrison's book is more than just a modernization of Hayek, though. He has taken Hayek's foundation and built upon it a macroeconomic model in a framework that fits comfortably within the bounds of what current macroeconomists will be familiar with. Thus, contemporary macroeconomists can assess the theory within the context of their own ideas, and it is easy to see what parts of Garrison's theory are consistent with mainstream macroeconomic thinking and what parts are new. And the theory is Garrison's, not Hayek's, although Garrison clearly builds on the foundation of Hayek's trade cycle theory, because Garrison extends the framework of Hayek's model so substantially. By doing so, Garrison takes the increasingly irrelevant ideas of Hayek and makes them relevant again.

In the 1930s, Hayek's trade cycle theory was the state of the art not only in Austrian economics, but in economics more generally. At a time when world events had thrust macroeconomic issues to the forefront of economics, Hayek's ideas were at the forefront of macroeconomics. However, there had

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been no substantial developments in Austrian macroeconomics since the 1930s, until Garrison's book. With this book, an increasingly aging Austrian macroeconomics has been rehabilitated and placed on a par with other contemporary schools of macroeconomic thought. Garrison's book is the definitive statement of Austrian macroeconomics at the beginning of the twenty-first century.

Because of its subject matter, *Time and Money* is a contribution to macroeconomics, but it also contributes to the Austrian School more generally. It is a major work which helps to advance the school. Yet it also makes a contribution because of its style and methodology. More than other schools of thought, Austrians tend to look back at their heritage in a serious way. This is understandable because Austrian economics is at odds with the mainstream in several ways. Thus, Austrian economists look back at earlier Austrians to try to analyze what is distinctly Austrian, and use that as a benchmark to evaluate how "Austrian" current work is, and in what ways it deviates from the tenets of Austrianism. From here, it is a small step to criticize contemporary work because of shortcomings that could be remedied by taking a more Austrian approach. To a certain extent, this analysis of the school's ideas in relation to the mainstream of economics is beneficial, but ultimately the school can advance only if its adherents show through their own work the merits of Austrian ideas. Garrison's book does that.

Garrison is not afraid to take parts of mainstream economics when they fit within his ideas, and his fundamental method of analysis is to build a model that will be easily recognized by mainstream economists, and to show how its distinctly Hayekian elements are crucial to understanding the model's operation, and by extension, the operation of the economy. As noted above, Garrison's key contribution in this regard is to show the importance of heterogeneous capital. From a methodological standpoint, Garrison does not defend his ideas because they are Austrian, or purport to show that this is an Austrian theory as opposed to that of some other school. Rather, he develops his model to show how the capital structure is crucial to understanding how the macroeconomy works, and how one cannot fully understand macroeconomic phenomena without understanding how they are related to underlying changes in the capital structure. Methodologically, Garrison develops his theory as an economic analysis—not an Austrian analysis—of the macroeconomy. He is concerned about showing what is true, not what is Austrian.

But Garrison's theory is an Austrian theory, as he recognizes, and to put it into context, he demonstrates within the framework of his model the similarities and differences between his ideas and those of the Keynesians and monetarists, whose ideas dominated the last half of the twentieth century. This comparison helps to show where the Austrian approach can add substantially to the understanding of the macroeconomy, but methodologically.

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Garrison does this not by criticizing other approaches, but rather by showing the differences among approaches in an analytical way. Leaving the macroeconomics aside, the Austrian School could use Garrison's approach as a good example of how to work within the school to advance its ideas.

Twenty-first-Century Austrian Macroeconomics

Garrison's book is the most substantial contribution to Austrian macroeconomics in sixty years, and coming at the beginning of the twenty-first century, it is natural to look ahead to the future of Austrian macroeconomics. Garrison's book lays a foundation for further development of macroeconomics by the Austrian School, but while Garrison gives an extensive comparison of his vision of macroeconomics with other existing visions, he does not speculate on promising future developments. His work could be built on in several ways. First, he presents a very simple and aggregated model of the economy, and his model could be made richer and more complex. Garrison's simple model provides a good understanding of the fundamental forces underlying macroeconomic phenomena, but understanding these fundamental forces, it seems natural to consider a more detailed economy with various sectors, various goods (both consumer and capital) with different levels of durability, natural versus manufactured resources, and the role of services in an economy. These are some examples of possible theoretical issues that could be developed by extending Garrison's overall framework.

Second, the model has a number of empirical implications, and Austrian macroeconomics would benefit both from empirical work that related the abstract notion of stages of production to real-world capital goods, and from empirical work that differentiates the Austrian view of macroeconomics from other approaches. And though some Austrians might take issue with this idea, the model also suggests the possibility of macroeconomic forecasting. If booms are inevitably followed by busts, this is a prediction that, with the appropriate data, could enable Austrians to have a better handle on future turns in the business cycle than other schools of thought. Nothing would build the credibility of Austrian macroeconomics faster than a few insightful predictions.

Third, the international implications of Garrison's model could be developed. In a sense, one might look at the model as applying to one world economy. After all, resources come from all over the world, and for most goods, different stages of production will occur in different countries. However, there are both natural and artificial barriers to trade in the form of different currencies, tariffs and other trade restrictions, and transactions costs in the form of language and cultural differences, not to mention differences in legal institutions. There has always been a close connection between macroeconomics

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and international economics, and Garrison's framework would be a good one for looking at international economic issues.

Fourth, Garrison's ideas are substantial enough that they should be introduced to a wider audience of economists by follow-up articles in mainstream economics journals. Introducing Austrian macroeconomics into mainstream journals will be an uphill battle, to be sure, because macroeconomics tends to be one of the areas within economics that is most insistent on a particular methodological approach. Nonetheless, the ideas are powerful enough that, presented the right way, they are publishable in mainstream journals. Doing so would help promote both the Austrian approach to macroeconomics and the Austrian School more generally.

These are some specific ideas, but the general point is that if Austrian macroeconomics is to advance, *Time and Money* must be viewed as the first step in the development of twenty-first century Austrian macroeconomics, not the final word on the twentieth-century Austrian business cycle. Ultimately, how important this book is will be determined by the work that follows it. If the Austrian School builds on it to develop Austrian macroeconomics, it could become a turning point not just in Austrian macroeconomics, but in macroeconomics in general.

References

Garrison, Roger W. 2001. *Time and Money: The Macroeconomics of Capital Structure.* London: Routledge.

Hayek, Friedrich A. [1928] 1975. *Monetary Theory and the Trade Cycle.* New York: Augustus M. Kelley.

——. [1935] 1967. *Prices and Production.* New York: Augustus M. Kelley.

Keynes, John Maynard. 1936. *The General Theory of Employment, Interest, and Money.* New York: Harcourt, Brace.

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GARRISONIAN MACROECONOMICS

JÖRG GUIDO HÜLSMANN

I am grateful for the editor's invitation to comment on Roger Garrison's *Time and Money*, which makes a case for new directions in Austrian macroeconomics. I have very much benefited from reading the papers of the other commentators who have justly praised the virtues of the book. I therefore enjoy the luxury of focusing my comments on some of the more problematic aspects of Garrison's work.

I

Garrison has a vivid sense for the necessity of adequate pedagogy to communicate Austrian ideas about the working of the economy, and he is very conscious of the power of symbols. His book is a great pedagogical effort aimed at replacing the dominant graphical representation of main macroeconomic relationships—the ominous Keynesian Cross—with a new representation, more genuine to the Austrian viewpoint, which stresses the time element in the structure of production. This focus on pedagogical problems has been an old theme in Garrison's work[1] and now finds a consummation in *Time and Money*. At the book's center stage is an original three-quadrant diagram[2] that is used (a) to illustrate how a market economy works and grows, (b) to illustrate the causes and nature of business cycles, and (c) to discuss and criticize the Keynesian and monetarist paradigms.

Below, we will deal with the question of whether and to what extent Garrison's diagram is a suitable tool for scientific education. Here we need to point out that this pedagogical innovation is not matched by similar contributions in the area of pure theory. The book features many insightful discussions of policy problems, but its contribution is mainly pedagogic, not theoretic. A

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[1]His first publication had exactly the same focus. See Garrison (1978).

[2]See Figure 3.7, p. 50, and passim.

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sober look at it reveals that it contains few new theoretical ideas or discoveries of important, hitherto overlooked, macroeconomic facts or relationships. It even contains few discussions of fundamental theoretical problems–an exception being the discussion of the place and significance of expectations in economic theory–and thus remains, as far as theoretical development is concerned, by and large in the year 1931, when *Prices and Production* first appeared. Let us emphasize that this is not a deficiency per se; it is a sad truth that present-day mainstream economics in many ways has yet to make it to 1931, and *Time and Money* might help to change this. Garrison's book, however, is not a breakthrough on the front of theoretical macroeconomics, as were post-1931 works by Mises (1949), Rothbard (1963, 1993), and Huerta de Soto (1998).

II

Most important, unlike these latter works, *Time and Money* is based on the assumption that "money has no market of its own" (p. 51). This is in fact the fundamental assumption of the Wieserian line of Austrian monetary theorists (Hayek, Machlup, Strigl). In line with this assumption, Garrison asserts that his three-quadrant diagram

> can be taken to depict, if not actually a barter system, a tight-jointed system. That is, money is assumed to allow market participants to avoid the inefficiencies of barter–without introducing any inefficiencies of its own. So interpreted, the interrelationships shown in Figure 3.7 belong to the realm of pure theory. (p. 52)

It would lead us too far astray to discuss the validity of this assumption and its far-reaching implications. Let us emphasize, however, that it is irreconcilable with the standpoint developed in the writings of Menger, Mises, Rothbard, and others. These authors stress that money is a commodity and therefore has a market of its own, and that it can never be "tight-jointed" or "neutral" in Hayek's sense, namely, in the sense that it could leave income distribution and factor allocation just as they would be in a barter economy. Strictly speaking, Garrison's macroeconomics is therefore macroeconomics without money.

III

In order to put *Time and Money* in a proper perspective, it is useful to stress certain facts of the history of economic thought.

Modern macroeconomics began with Böhm-Bawerk's seminal *Capital and Interest*. The epithet "modern" is shorthand for "post-Ricardian" and refers most notably to the application of methodological individualism in explanations of phenomena such as the production structure, capital, and money

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interest. Böhm-Bawerk showed that and how these phenomena, which affect more or less all members of society ("the economy as a whole"), result from individual human action and interaction. Menger had pioneered this method. He had shown how prices on individual markets spring from the acting person's evaluation of marginal quantities of economic goods. Böhm-Bawerk did nothing but extend the application of this method to explain how the various markets interrelate, what costs are, and how and why interest comes into existence. Later, Mises applied the very same method to explain the impact of money on the economy, and to analyze the business cycle. With Mises's 1912 treatise on money, Austrian economics had come full circle, giving a coherent and encompassing explanation of all economic phenomena (see Mises 1980).

It is therefore of little surprise that the early Austrian economists did not distinguish between microeconomics and macroeconomics. There was in their eyes only one type of economic analysis, which was based on certain invariable facts of human action–such as "only individual persons act," "acting involves choosing," "choice refers to marginal units of economic goods"–and which was able to give a satisfactory explanation of all economic phenomena. From this point of view, one might call certain phenomena "macroeconomic" because they are virtually immune from the choices of any given person, but result from the combined effect of the choices of great masses of people; and one might call other phenomena "microeconomic" because here the impact of individuals is perceptible and important. But this distinction is entirely nominal–it is an artificial convention without foundation in real differences. The fact is that all economic phenomena result from individual choices; hence, Menger's method can be applied universally; and ultimately there can be only one unified economic science, just as there is only one real world that this science describes.

The backlash against the modern theory came from the British main island. English economists had been more reluctant than others to endorse the new marginal analysis of value and prices, and they were virtually immune from any innovations within the theory of money. Then Keynes's *General Theory* in one stroke restored to its place of honor the old Ricardian conception of the economy as a machine. Production, employment and unemployment, interest, and prices no longer resulted from the ever-changing interplay of individual actions. They were now elements of the Economic Machine, caught up in relations fixed forever, and thus liable to be manipulated by social engineers who, like the captain of a great ocean liner, steered the economy along a desirable course. Also, given the basic assumption of the fixity of the relationships between various macroeconomic phenomena, there was no longer any use for the delicate tools of marginal analysis that had been developed in Vienna and elsewhere. Theories of aggregate demand, aggregate supply, and the price level thus supplanted the theory of value and the regression theorem.

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This is by and large how things have stayed within the economic mainstream until the present day. Under the impact of government-financed higher education, the old Ricardian-style macroeconomics had driven modern macroeconomics out of the universities. Generations of students have learned, and learned to bear, the Keynesian Cross; its coordinates directed, and often also limited, their imagination. The result is the barren state of what we know today as neoclassical macroeconomics.

The significance of *Time and Money* is that it seeks to convey "Austrian messages"—most notably, that the time-structure of production is an important factor determining money's impact on the economy—within a neoclassical framework. Garrison casts these messages in the terms of his three-quadrant model, which features (1) an aggregate market for loanable funds, (2) an aggregate production possibilities frontier, and (3) an aggregate Hayekian triangle.

The diagrammatical exposition of this model has much aesthetic appeal, and thus it might not be unreasonable to expect that Garrison-style macroeconomics will make Austrian converts among mainstream economists and their students. Yet there is also the possibility that Garrison not so much succeeds in Austrianizing the mainstream as that he will mainstream the Austrians. For the fact remains that Garrisonian macroeconomics is essentially neoclassical macroeconomics, which he enriches with an Austrian model. His main concern is not so much with economic analysis as with representing the results of a foregoing economic analysis; and the elements of the analysis and representation are not individual human actions, but quantities of things that are subject to human action. We will now have to inquire whether and to what extent his attempt has been successful.

IV

The Austrian business cycle theory (ABCT) is essentially a theory of the causes, manifestations, and implications of mass error; in short, it is a theory explaining clusters of errors within the market economy.

ABCT claims that injections of new quantities of money into the credit market can reduce the rate of interest below its equilibrium level; with the new money, entrepreneurs make additional investments in higher-order production stages, bidding laborers away from other branches of industry. This new course of action is entirely unsustainable, however, and must therefore sooner or later be corrected. Production takes time and can only be successfully completed if enough consumer goods and consumer-goods-producing capital goods are available during the entire production process. Any extension of the structure of production requires a foregoing increase of savings, or else the production would have to be halted and abandoned midway. Yet

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the inflation-induced extension of the structure of production is precisely such an extension without a foregoing increase of savings. It cannot be sustained. Sooner or later the market participants will discover that the available resources do not suffice to complete all ongoing investment projects. The moment of this discovery of past errors is the "crisis"; it entails rising unemployment and other forms of reallocation of resources, jeopardizing previous plans, destroying communities and firms.

The above verbal statement of the theory leaves many questions open, but still gives the broad picture around the central theme–clusters of individual errors. To what extent, then, is this theme represented in Garrison's three-quadrant diagram? I contend that the issue is hardly raised at all and that, insofar as it is raised, it is dealt with misleadingly.

Let us first take a look at the market for loanable funds. Here the market participants believe that there are more loanable funds available than really exist. How is this dissociation between what people believe and what really is the case depicted in the diagram? It is not depicted at all. Garrison shows mechanical relations between interest on the one hand, and the demand and supply of loanable funds on the other hand. He asserts (p. 69): "An increased supply of loanable funds causes the interest rate to fall." But this is not necessarily the case. If the market participants realize that the new funds come in the form of inflation, then they can correctly anticipate the ensuing fall in the purchasing power of money. In other words, given correct anticipations, the demand curve for loanable funds would shift to the right, and the interest rate might remain unaffected.

Professor Garrison is certainly familiar with these considerations. My point is that the analysis of expectations and other features of human action is the true core of ABCT, because this analysis delivers an "economic grammar" to explain the variable relations between observable things such as interest and the business cycle. By contrast, the author of *Time and Money* seems to follow the orthodox neoclassical approach in that his main concern is with the relations between observable data; he tends to treat the actual analysis of human action as a secondary issue, one that essentially serves to make a plausible case for the "story" underpinning the relations that are the true object of his curiosity.

Yet how can one make sense of the very important notion of unsustainable production structure without referring to some physical impossibility? And what does it mean to say that human beings do unsustainable things? Clearly, they must have acted according to wrong ideas about the physical world. But to depict in a diagram the harmony of, or contradiction between, (a) human ideas about the world and (b) the world as it really is, it will not do to have just one demand and one supply curve. Rather–and this is aside from all other considerations that could be brought up against the use of demand and

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supply diagrams in general–it will be necessary to use *two curves*: one that shows demand and supply as it would be if based on correct beliefs about the real world, and another depicting demand and supply under the assumed actual (wrong) beliefs.

The same point can be made in regard to Garrison's production possibilities frontier (PPF) diagram. The use of PPF diagrams can in fact be extremely valuable in illustrating business cycle theory. The usual meaning of the PPF is that of a physical boundary that can not be transgressed. Increase of technological knowledge might shift the PPF, but this does not affect the underlying fundamental truth, namely, that the finite nature of the physical world entails certain strict limitations on human action. How can the Austrian theme of inflation-induced clusters of error be represented in such a conventional PPF diagram? Again, this can be done by contrasting two curves: one that represents the "real PPF," that is, the PPF as it really is, independent of human choice; and another curve that represents the "imaginary PPF," which is the PPF that people believe exists and which underlies their decision making. As a consequence of an inflation-induced distortion of the interest rate, the imaginary PPF expands and comes to be dissociated (or, more precisely, more dissociated than it otherwise would be) from the real PPF. Entrepreneurs then make malinvestments, which shrink the real PPF, thus further increasing the dissociation between the real production possibilities and what people believe the production possibilities to be.

Which use does Garrison make of the PPF to represent the Austrian theme of clusters of entrepreneurial error leading to malinvestment? The first thing to notice is that Garrison (pp. 44 and 70) employs a rather idiosyncratic definition of the PPF. In his eyes, the "PPF represents sustainable combinations of consumption and investment." Thus the PPF is not a choice-independent physical limitation of human action, but a permeable frontier, which in economic booms can be transgressed at least for short periods, albeit at the price of necessary busts at some later point of time.

This unusual use of language is likely to spur misunderstandings and misinterpretations (I can attest to the fact that it has led to misunderstandings and misinterpretations at professional meetings), but one might still say that, as a definition, it is unobjectionable. The real problem is that it makes Garrison's diagrammatical account of the business cycle empty. It is one thing to draw a curve and say that it represents a limit for sustainable combinations of alternative production processes. It is another thing to explain why combinations are sustainable or unsustainable. The answer to the latter question cannot be provided without reference to the physical limitations imposed on us by the real world. How can one make sense of the *necessity* of the eventual bust without recurring to some notion of physical impossibility? It is indeed out of the question to avoid any such reference.

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Second, and even more important, in his PPF representation of the business cycle, Garrison depicts the inflation-induced boom as an unsustainable economic expansion. The economy moves briefly beyond the PPF into the unsustainable area, from which it eventually will be smashed back in the ensuing bust.

The problem with this representation of things is that it implies that, at least for some time, the inflation can create real economic growth (see Figure 4.4, p. 69). The inflation-induced increase of "output" is only a particular increase of "output" in general–namely, an unsustainable one. And the "boom" that follows credit expansion is, in a way, just as much a "boom" as any other instance of economic growth; the difference is merely that it is unsustainable.[3] This is of course not true. Inflation never ever increases overall production; it merely brings about a redistribution of resources in favor of the first recipients of the new money tickets, and at the expense of the later recipients.

But there is also a political implication to the view that inflation can create real economic growth. For if this view were accurate, what could fundamentally be objectionable about a policy of continuous and even accelerating inflation? Is the only objection that in the long run this policy is "unsustainable"? This would not be a very powerful deterrent if in the short and medium run we could live like kings by printing paper money.

Ironically, Garrison's diagrammatical presentation of ABCT makes the latter some variant of the "hangover theory" of the business cycle, a fallacious doctrine that Garrison has himself vigorously criticized on other occasions. According to the hangover theory, the bust is the deplorable consequence of a previous boom economy. Just as the party animal has a hangover after a binge, so the economy has a hangover after a period of excessive growth. But this analogy is faulty. The truth is that the party animal *really* had a great time. He knew how he would feel the next morning and nevertheless partied because this was the price to be paid. By contrast, the people in the booming economy *erroneously* believe they are living through a period of growth whereas in reality they are in the process of wasting resources–a process that is somewhat camouflaged by the fact that some members of society are ripping off their fellows through the printing press.

V

There is a final problem of a rather technical nature that should not go unmentioned. It concerns the way Garrison relates his three diagrams to one another. He claims (p. 49f.) that

[3]Garrison frequently says things such as "the boom is unsustainable" (p. 72) or speaks of an "unsustainable high level of output" (p. 73). This means of course that a boom can also be sustainable and that an unsustainable high level of output is still a high level of output.

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> the basic interconnections among these elements follows [sic] almost without discussion. . . . The loanable-funds market and the PPF are explicitly connected by their common axes measuring investment. The PPF and the structure of production are explicitly connected by their common axes measuring consumption.

However, the vertical axis of the Hayekian triangle "measures the *value* of the consumable output of the production process" (p. 46; emphasis added), whereas the PPF's vertical axis is in real terms. Garrison does not clarify the relationship between these two distinct dimensions; to do so would indeed require him to give a far more sophisticated account of money's role within the structure of production than he has given in the pages of *Time and Money*. Rothbard's (1933, chap. 7) analysis is still unsurpassed in this respect. Austrian macroeconomists are well advised to make ample use of Rothbard's ideas.

Similarly, the funds dealt with on the loanable-funds market do presently exist, whereas the horizontal axis of the PPF shows capital goods produced with the help of these funds in the course of a "year." One might plausibly argue that there is a strict proportionality between funds invested and capital goods produced. Still, accuracy requires pointing out (a) that the axes are not located at the same point of time; therefore they cannot strictly speaking, be "common axes" and would at least have to have different indexes, for example, I_t and I_{t+1}; and (b) that the axes do not have the same dimension; I_{t+1} denotes some capital goods whereas I_t denotes money. Of course this raises the question of what exactly happens in between I_t and I_{t+1} and how precisely they are linked to one another. Garrison's model is not complete here either.

VI

We have pointed out two major shortcomings of *Time and Money*. First, Roger Garrison endeavors to pursue the analysis of marcoeconomic phenomena without taking account of the fact that money is a commodity. Second, he chooses the typical focus of neoclassical economists, dealing mainly with the relations between things at the expense of the typical Austrian focus, which is on the analysis of human action proper. As we have seen, these shortcomings reduce the effectiveness of Garrison's attempt to give diagrammatical expression to Austrian ideas, in particular to the Austrian theory of economic booms and busts.

Nobody will doubt the usefulness of diagrams and other graphic means to convey scientific ideas, and teachers of economics will thus be grateful for the stimulus provided through *Time and Money* to give more thought to the adequate representation of Austrian theories. There is in these matters ample room for many more innovations. Let us therefore hope that one day Roger

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Garrison's work will be seen as the starting point of a renaissance of the teaching of Austrian economics.

References

Böhm-Bawerk, Eugen von. 1959. *Capital and Interest.* George D. Huncke and Hans Sennholz, trans. South Holland, Ill.: Libertarian Press.

Garrison, Roger W. 1978. "Austrian Macroeconomics: A Diagrammatical Exposition." *New Directions in Austrian Economics.* Louis M. Spadaro, ed. Kansas City: Sheed Andrews and McMeel. Pp. 167-204.

——. 2001. *Time and Money: The Macroeconomics of Capital Structure.* London: Routledge.

Hayek, F.A. 1931. *Prices and Production.* London: Routledge.

Huerta de Soto, Jesús. 1998. *Dinero, crédito bancário y ciclos económicos.* Madrid: Union editorial.

Mises, Ludwig von. [1912] 1980. *Theory of Money and Credit.* Indianapolis, Ind.: Liberty Fund.

——. [1949] 1998. *Human Action: A Treatise on Economics.* Scholar's Edition. Auburn, Ala.: Mises Institute.

Rothbard, Murray N. 1993. *Man, Economy, and State.* 3rd ed. Auburn, Ala.: Mises Institute.

——. [1963] 2000. *America's Great Depression.* 5th ed. Auburn, Ala.: Mises Institute.

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Does the Concept of Secular Growth Have a Place in Capital-Based Macroeconomics?

Joseph T. Salerno

Macroeconomic analysis has been relatively neglected by Austrian economists since the beginning of the Austrian revival in the early 1960s with the publication of Murray N. Rothbard's *Man, Economy, and State* (1993)[1] and *America's Great Depression* (2000). Rothbard's treatise contained new and improved elaborations of the Austrian theories of money, capital, and business cycles. In particular Rothbard integrated the structure-of-production analysis developed by Wicksell and Hayek with the Fetter-Mises pure time-preference theory of interest, thus at last reuniting after many years two divergent strands of Böhm-Bawerk's capital and interest theory.[2] In *America's Great Depression*, Rothbard provided a notable application of Austrian business cycle theory that still stands as the exemplar of applied research in Austrian economics.

Unfortunately, after Rothbard's pathbreaking contributions, systematic thinking in Austrian macroeconomics was not very vigorously pursued.

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[1]See esp. pp. 160-200, 273-86, 463-501, 661-764.

[2]Perhaps because he was so eager to distance himself from Böhm-Bawerk's flawed notion of a backward-looking and quantifiable "average period of production," Mises (1998, pp. 476-534) eschewed analysis in terms of an aggregate structure of production in his detailed restatement of capital and interest theory.

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Macroeconomic research was not even stimulated by the awarding of the Nobel Prize in economics to Hayek in 1974—a prize that was bestowed for the superb work Hayek had done in the 1930s on capital and business cycle theory. With two notable exceptions, methodological and microeconomic concerns came to dominate the Austrian literature in the early 1970s and continued to almost completely engross the attention of Austrian economists for the last quarter of the twentieth century. The nature and function of entrepreneurship; whether the market process is inherently equilibrating or harbors disequilibrating tendencies; the primary function of the price system as a disseminator of knowledge or a tool of monetary calculation; the nature and source of monopoly and of expectations—these are the kinds of issues and controversies that have absorbed the lion's share of the attention from economists writing in the Mengerian tradition since Rothbard formulated his research program for modern Austrian macroeconomics.

One of the two notable exceptions to this microeconomic trend in contemporary Austrian thinking involved William Hutt's efforts in the 1970s to formulate an approach to macroeconomic issues that was rooted in the Austrian microfoundations of a dynamic market process in a remarkable trilogy of works: *A Rehabilitation of Say's Law* (1974), *The Theory of Idle Resources* (1977), and *The Keynesian Episode: A Reassessment* (1979). While there have been a few scattered attempts to follow up Hutt's work, no strong movement in this direction has yet emerged.[3] The second exception is the ongoing internecine debate over the consequences of unregulated fractional reserve banking for the financial system and for the overall economy.[4] However, this controversy, while it has led to some important clarifications and elaborations of Austrian monetary theory, hardly substitutes for the systematic advancement of Austrian macroeconomic analysis that has become so urgently necessary in the face of the revolutionary development that mainstream macroeconomics has undergone since the rational-expectations revolution of the mid-1970s and that continues today in the endogenous growth literature.[5]

In *Time and Money*, Roger Garrison (2001) now provides the substantial restatement and diagrammatic elaboration of Austrian macroeconomic analysis that has been so sorely lacking these many years. Garrison accomplishes this by constructing an analytical apparatus that Austrians can bring to bear

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[3]For Austrian treatments of Hutt's macroeconomic contributions, see Salerno (1991, pp. 325-43); Egger (1994, pp. 107-38); and Horwitz (2000, pp. 176-202).

[4]For recent contributions to the long-running "free banking" controversy, see Selgin and White (1996, pp. 83-107), and Hoppe, Hülsmann, and Block (1998, pp. 19-50).

[5]On the spectacular dimensions of this development, see, for example, Snowdon and Vane, eds. (1999, pp. 1-90).

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on the central issues and problems of interest, business cycles, and growth that are of concern to contemporary mainstream macroeconomists. Clearly, future research in Austrian macroeconomics will rest on the analytics of Garrison's "capital-based macroeconomics." For this reason it is crucial to get the analytics right from the very start. In particular, it is essential to carefully scrutinize Garrison's analytical apparatus to ensure that it does not implicitly assume any causal relationships that contradict the underlying verbal-logical theorems that it is built upon.

In this spirit, I would like to address what I believe to be a problem with Garrison's conception of secular growth. According to Garrison:

> Secular growth occurs without having been provoked by policy or by technological advance or by a change in intertemporal preferences. Rather, the ongoing gross investment is sufficient for both capital maintenance and capital accumulation. (p. 54)

Nor is the case of secular growth merely a theoretical curiosity for Garrison, for he maintains, "The macroeconomics of secular growth provides a more realistic baseline [than a stationary, or no-growth, economy] for analyzing particular changes in preferences or policies" (p. 55).[6] Garrison's characterization of secular growth thus implies that–all other things including technology equal–period after period, net investment can occur without a deliberate act of net saving, that is, a choice to forego an additional quantity of current consumption evoked by a definite fall in time preferences.

However, in Austrian capital theory, each dose of net investment, *ceteris paribus*–and after a transition period during which the appropriate resource reallocations have been completed–brings about a stationary economy in which the new higher level of gross investment and the elongated structure of production is just sufficient to support a definite increase in the flow of consumer goods. As long as gross investment is maintained at its new higher level, the output of consumer goods per period will remain constant. In other words, regardless of how great is the increment of real income forthcoming from a previous act of net saving-net investment, any additional lengthening of the production structure can only be initiated by an alteration in intertemporal preferences. The increase in real income resulting from a given dose of net investment does not buy, as it were, an automatic and continuous flow of extra capital goods that can be utilized for further extensions of the structure of production; all capital goods created by an act of net saving are fully absorbed in maintaining the enhanced flow of real income characterizing the new stationary economy.

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[6]It should be noted, however, that Garrison goes on to conduct his comparative static analyses using the no-growth economy as his baseline while keeping the secular component of growth in the background.

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Let me illustrate my argument with a simple numerical example that traces the evolution of a Robinson Crusoe economy through five periods, starting with T_0 and ending with T_4. The economy is represented in Table 1 (below) in terms of the daily allocation of Crusoe's labor among alternative employments and the resulting product of each of these employments. In period T_0

TABLE 1

PERIOD	INPUT	OUTPUT	DURABILITY NEW CAPITAL	GROSS & NET INVESTMENT/TOTAL CAPITAL
T_0	12 hrs. →	12 hrs. leisure		G = 0; N = 0; K = 0
	12 hrs. →	4 fish		
T_1	11 hrs. →	11 hrs. leisure	Fishing net: 500 days	G = 4 hrs. per day
	9 hrs. →	3 fish		N = 4 hrs. per day
	4 hrs. →	building net (B = 500 hrs.)		ΔK = 4 hrs. per day for 125 days
T_2	14 hrs. →	14 hrs. leisure		G = 1 hr. per day
	9 hrs. →	9 fish		N = 0 hrs. per day
	1 hr. →	replacing net		K = 500 hrs.
T_3	13 hrs. →	13 hrs. leisure	Ladder: 1,200 days	G = 4 hrs. per day
	7 hrs. →	7 fish		N = 3 hrs. per day
	1 hr. →	replacing net		ΔK = 3 hrs. per day for 200 days
	3 hrs. →	building ladder (B = 600 hrs.)		
T_4	13 hrs. →	13 hrs. leisure		G = 1½ hrs. per day
	8 hrs. →	8 fish		N = 0 hrs. per day
	1½ hrs. →	6 coconuts		K = 1,100 hrs.
	1 hr. →	replacing net		
	½ hr. →	replacing ladder		
T_5	13 hrs. →	13 hrs. leisure	House: 10,000 days	G = 3 hrs. per day
	7 hrs. →	7 fish		N = 1½ hrs. per day
	1 hr. →	4 coconuts		ΔK = 1½ hrs. per day for 2,000 days
	1 hr. →	replacing net		
	½ hr. →	replacing ladder		
	1½ hrs. →	building house (B = 3,000 hrs.)		

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Crusoe divides his daily labor endowment of 24 hours evenly between the production of leisure and the catching of fish by hand, yielding 12 hours of leisure and 4 fish. The result is a stationary economy in which gross investment (G), which is equal to replacement investment (R) plus net investment (N), and total capital invested (K) are both constant and equal to 0. Net investment, defined as a change in total invested capital, is therefore also 0.

It can now be assumed that Crusoe experiences a lowering of his time preferences and decides to invest in building a durable good, let us say, a fishing net that will triple his future productivity in catching fish. The net, we assume, requires a building time (B) of 500 hours of labor and will remain fully productive for 500 days, after which it will become totally useless and must be replaced. We further assume that its durability is invariant to the intensity of its daily use. Crusoe chooses to allocate 4 hours per day for 125 days to build the net, sacrificing or "saving" 1 fish and 1 hour of leisure per day and accumulating a total capital investment of 500 labor hours during the transition period, T_1. Crusoe's pattern of productive activities during T_1 brings into being a progressing economy in which net investment is positive and total capital is increasing. When the fishing net is completed at the end of T_1, and assuming Crusoe's intertemporal preferences remain unchanged, a new stationary economy emerges in period T_2 in which Crusoe's standard of living improves to 14 hours of leisure and 9 fish. To maintain this standard of living intact, Crusoe would need to devote 1 hour of labor per day to replacing the existing fishing net with a new one, so that total capital invested in this economy remains constant at 500 hours and net investment falls back to 0.

Now it may be the case that, as a result of the more abundant provision of present consumer goods resulting from his previous act of net saving, Crusoe's time preferences fall again, so that the stationary economy depicted in T_2 never materializes, and Crusoe's economy moves directly to the progressing economy depicted in period T_3. In other words, the present prospect of the eighth and ninth fish and the fourteenth hour of leisure per day ranks lower on Crusoe's current value scale than, for example, the quantity of future coconuts that may be obtained by investing in the construction of a ladder that permits him to collect them from trees. Thus Crusoe invests 3 hours per day for 200 days building a ladder that will completely wear out after providing a product for 1,200 days, again regardless of the intensity of its daily use. When the ladder has been completed Crusoe's economy may then (a) either settle into the stationary economy depicted in T_4, in which net investment is once again zero and total capital investment is maintained constant at 1,100 hours with daily replacement investment equal to 1½ hours, or, (b) by virtue of a further decline in his time preferences induced by his rising real income, Crusoe may immediately undertake yet another act of net investment. For instance, he may undertake the construction of a house, as in T_5, that will

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cost him a decline in the potential standard of living attainable in the stationary economy of T_4.

It is important to note that, despite the fact that Crusoe's real income in T_3 is sufficiently greater than it was in T_1 to afford Crusoe both an unambiguously higher standard of living and the wherewithal to undertake extra investment beyond the requisite replacement investment, the resources needed for the net investment are not somehow gratuitously available but are the product of a fall in Crusoe's time preferences and a corresponding act of net saving. The same is true with regard to the relationship between the progressing economies described in periods T_5 and T_3, respectively. Thus, in the course of Crusoe's economic development, it is possible that the stationary economies portrayed in periods T_2 and T_4 are never realized, because Crusoe's economy is in continual transition to a production structure based on ever-higher levels of the total capital stock. Nevertheless, these notional no-growth economies still play a key role in the evolution of Crusoe's economy because they are the source of the opportunity costs incurred by Crusoe in his choices to undertake discrete acts of net saving and net investment. Thus, in T_5, Crusoe lengthens his production structure vis-à-vis T_4 in order to accommodate his choice to sacrifice present enjoyment of 1 fish and 2 coconuts for a period of 2,000 days to achieve his investment goal of a shelter that yields him housing services for the succeeding 10,000 days.

This example is not designed to prove my argument against Garrison but merely to illustrate the difference in our positions and to shed light on an important methodological assumption upon which we differ. Garrison holds that "secular growth" occurs when ongoing gross investment with fixed technology and intertemporal preferences is sufficiently large to provide for maintenance of the existing capital structure as well as providing resources for accumulating additional capital. According to Garrison, therefore, Crusoe's choice in T_1 to reallocate 4 hours of labor from consumer goods' industries (above the dashed line) to capital goods industries (below the dashed line) initiates a secular growth process that propels the economy sequentially through periods T_3 and T_5 without any further alteration in Crusoe's time preferences. Garrison's contention that this growth process takes place in the absence of intervening "wealth effects" implies that the stationary economies depicted in periods T_2 and T_4 are completely irrelevant to the story.[7]

My objections to Garrison's story on secular growth are both substantive and methodological. Substantively, an immediate inference from what Mises calls "categorial" time preference–the preference for present over future satisfaction that is expressed in every action–is that an actor's "period of provision"

[7]"Our treatment of secular growth abstracts from this relationship between wealth and time preferences" (p. 55).

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can never be infinite and must come to a close within a definite period of the future.[8] This implies that, with a given state of time preferences and technology, net investment and capital accumulation cannot go on indefinitely and that corresponding to each configuration of the data is a particular stationary economy in which gross investment is completely exhausted in replacing the existing capital structure in order to maintain the extant flow of consumer goods. Secular growth, construed in the Garrisonian sense, thus contradicts categorial time preference because it implies that at least some portion of investment in the economy is self-generating, requiring no renunciation of present goods and unconstrained by any agent's period of provision.[9]

On the methodological level, when analyzing economic change, Austrian economics employs the method pioneered by Carl Menger and Eugen von Böhm-Bawerk. This method rests on the recognition that every causal process involves a beginning and an end. A complete explanation of the market process therefore requires a description of the factors that maintain it in motion as well as of the conditions that bring about its cessation (Mises 1998, pp. 331-32). Market processes are actuated by entrepreneurs seeking to profit by adjusting production to (anticipated) changes in the underlying economic data. As long as the adjustment is not complete, positive and negative gaps will persist between input and output prices in various lines of production. These prospective profits and losses will continue to agitate the market as entrepreneurs persistently reshuffle resources between different industries and processes of production in an effort to attain profits and avert losses. However, once production has been completely adjusted to the new constellation of the data, the prospect of profit will disappear and the market process will cease its operation. The theory of entrepreneurship thus provides the positive description of the market process while the imaginary constructs of the final state of rest, the ERE and–for the special problems of capital accumulation

[8]The period of provision is defined by Mises as "the fraction of future time for which the actor in a definite action wants to provide in some way and to some extent" (1998, p. 478). On categorial time preference and its implication of a definite and finite period of provision, see pp. 480-81, 533-34.

[9]Ibid., p. 525:

> As long as the world is not transformed into a land of Cockaigne, men are faced with scarcity and must act and economize; they are forced to choose between satisfaction in nearer and in remoter periods of the future because neither for the former nor for the latter can full contentment be attained. Then a change in the employment of factors of production which withdraws such factors from their employment for want satisfaction in the nearer future and devotes them to want-satisfaction in the remoter future must necessarily impair the state of satisfaction in the nearer future and improve it in the remoter future.

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and capital consumption—the stationary economy provide the negative description of the (unrealizable) conditions of full adjustment that would suspend its motion.[10]

The construct of the stationary economy is thus indispensable in analyzing the process by which the capital structure of a modern market economy adjusts to a change in time preferences.[11] As noted, Austrian economists envisage all market adjustment processes as propelled by the entrepreneurial pursuit of profits whose existence indicates a maladjustment between the current pattern of resource allocation and the pattern that is consistent with the prevailing configuration of the economic data. The progressive adjustment achieved in the course of the market process is marked by a decline of profits and losses toward zero. In order to illuminate the contours of the adjustment process, the starting point and ending point of Austrian process analysis is therefore the image of an economy that is fully adjusted and in which the driving force of profits has been completely exhausted. The stationary economy defines a situation in which individual firms continue to reap profits and losses while aggregate profits equal zero. The aggregate capital values of all firms in the stationary economy, that is, total invested capital, therefore, remain constant, so that gross investment is equal to replacement investment and net investment is nil. Positive net investment disrupts the stationary economy and brings about a progressing economy involving capital gains for higher-order capital goods firms and capital losses for lower-order capital and consumer goods firms, with the excess of the former over the latter reflecting the progressive increase in total invested capital. The augmentation of the aggregate capital values of the economy's firms caused by increased investment expenditures accrues at first mainly in the form of aggregate positive profits to the higher-order firms. These profits induce producers of higher-order capital goods to expand their operations by increasing their demand for labor and other nonspecific resources whose prospective discounted marginal products suddenly exceed their real rental prices. As the entrepreneurial bidding process proceeds, real wage rates and land rents are eventually bid up to fully reflect the enhanced marginal productivity of labor and land factors, and the increment in real income is thus completely imputed to the owners of original resources (and the investors of the additional savings). In fact it is this very

[10]As Mises (ibid., p. 331) notes "The main importance is to be attached to the positive description. The negative description resulting in the imaginary constructions of the final price and the evenly rotating economy is merely auxiliary."

[11]Thus the imaginary construct of the stationary economy, and the related constructs of progressing and retrogressing economies play a central role in the capital theory of Austrians such as Mises and Rothbard. For Mises's description of these constructs, see ibid., pp. 251-52, 256-57; for Rothbard's (1993, pp. 481-84) construction of the stationary economy which differs in one important respect from Mises's.

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increase in the price appraisements of the original factors by entrepreneurs in the higher stages of production that induce the producers of consumer goods and their direct suppliers to seek to minimize their costs by releasing labor and land factors to the higher stages and substituting the newly produced capital goods, that is, by investing in rendering their operations more capital intensive (Hayek 1967, pp. 86-87). The disappearance of aggregate profits in the economy will thus coincide with the final adjustment of the production structure to the intertemporal preferences of consumers, at which point the progressing economy will necessarily give way to the stationary economy.[12]

Now Garrison's concept of secular growth in which net investment and therefore aggregate profits are routine phenomena which display no tendency toward obliteration does not appear to be amenable to this Mengerian style of process analysis. Secular growth–which recall entails ongoing net investment which is not called forth by changes in the data–seemingly involves an economic maladaptation that reproduces itself endlessly. But Garrison's treatment of secular growth involves another deviation from Menger's analytical method, as well as a pedagogical simplification of the market forces that determine the interest rate that I believe misleads him into a substantive error. Before addressing these issues, let me set out some basic principles on which Garrison and I would be in agreement.

In a modern market economy operating under a complex material and intellectual division of labor in which all exchanges are necessarily monetary exchanges, the length of the production structure is the outcome of the choices of myriads of individuals whose time preferences and periods of provision vary widely. Needless to say, unlike our hypothetical Crusoe, none of these individuals is capable of mentally grasping, let alone optimally arranging, the social production structure. In our hypothetical Crusoe economy, the actor's time preferences are reflected in a structure of intertemporal rates of substitution, or "own rates of interest," that vary between the different consumer goods. For example, in period T_4, the own rate of interest for fish is approximately 360 percent per year, while the own rate for coconuts is about 90 percent per year.[13] However, Crusoe need not know these rates to guide his intertemporal production decisions because, in his simple economy, he can

[12]For a fuller description of this process, see Mises (1998, pp. 292-95) and Rothbard (1993, pp. 479-84).

[13]In the case of fish, reallocating the 1 hour of daily replacement labor on the net to current fish production would increase current product by 1 fish today at the expense of the daily services of the net 500 days in the future, entailing a reduction in daily fish output from 9 to 3. In other words future fish are substituted for present fish in the ratio of 6:1, or 500 percent per 500 days. Similarly, in coconut production, forgoing one-half hour of replacement labor on the ladder today will expand daily production by two coconuts today, while causing coconut output to decline from 8 to 0 1,200 days in the future yielding an intertemporal substitution ratio of 4:1, or 300 percent per 1,200 days.

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directly evaluate and compare the psychic revenues and costs of alternative actions. Moreover, even if he did compute these own rates of interest they would be of little use to him in evaluating potential investment projects because such rates result from an indissoluble intertwining of his valuations of present versus future satisfactions with his relative valuations of the concrete goods. Only in a monetary economy is the element of pure time preference disentangled from the relative valuations of the various commodities and given a unitary expression in the interest rate.[14] Ironically, the individual—even if he possesses perfect knowledge of his own future value scales—is unable to assess his own overall time preference without recourse to monetary calculation.

In the market economy, then, the interest rate fundamentally reflects the interaction of individual time preference scales in market exchanges between the owners of present and future goods, that is, in exchanges between the owners of saved money capital and the owners of original and intermediate factors of production. This "originary" (Mises) or "pure" (Rothbard) rate of interest is the rate of exchange between present goods and future goods and is primarily manifested as the uniform rate by which the prospective marginal value products yielded by currently invested factor services in time-consuming production processes of different lengths are discounted. This social time discount rate simultaneously determines the social consumption-saving ratio, the supply of and demand for capital, and the price margins (Hayek) or price spreads (Rothbard) between the inputs and outputs of each stage of production. The pure interest rate therefore also governs the profitability and thus the extent of investment in each production process and, hence, the overall length of the structure of production. In the stationary economy, entrepreneurial profit-seeking will drive the rate of return on investment, or, in Wicksellian terms, the "natural rate of interest," toward equality in all stages and processes of production.

The prospective interstage price margins are thus the primary influence governing entrepreneurs' actions in adjusting the structure of production to the intertemporal preferences of consumers.[15] The loanable funds market is wholly

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[14]Mises (1990, p. 65):

> Only where money exists can we clearly analyze the difference in value between present and future goods. Only within a monetary economy can this value difference be comprehended in the abstract and separated from changes in the valuation of individual concrete economic goods.

[15]"The rate of originary interest directs the investment activities of the entrepreneurs. It determines the length of waiting time and of the period of production in every branch of industry" (Mises 1998, p. 529).

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derivative and of secondary importance in the pure theory of capital and interest, as has been recognized by most leading Austrian capital theorists.[16]

This conclusion is reinforced by the Mengerian view of the market as essentially the process by which the interpersonal distribution of property is adjusted through exchanges that entail a mutual enhancement of want satisfaction. For Menger, then, prices were "symptoms of an economic equilibrium in the distribution of possessions between the economies of individuals." Moreover, Menger (1981, p. 192) warned, because "prices are the only phenomena of the process [of want-satisfaction] that are directly perceptible," there is an erroneous tendency to regard "the magnitude of the price as the most essential feature of an exchange." In his own exposition and development of Mengerian price theory, Böhm-Bawerk was thus careful to verbally elaborate his analysis of price determination in terms of the "marginal pairs," eschewing the graphical analysis of supply and demand. Thus, although Böhm-Bawerk (1960, p. 233) did "accord full recognition" to "the mathematical form of presentation," he questioned whether it could adequately substitute for his "running commentary of the determination of price," which highlighted the mutually beneficial restructuring of property of the individual traders that underlies and drives the emergence of the market price.

Richard von Strigl explicitly applied the Mengerian vision of the market process to "an economy based on the division of labor using roundabout methods." As Strigl noted,

> In this, too, the exchange can be restricted to correcting the distribution of property in the sense that individual economic subjects exchange what they have step by step for something they need more urgently: Laborers exchange their labor for immediate payment, the owner of capital goods sells these for cash, the producer of consumer goods also sells for immediate payment and, finally, those who function in general as entrepreneurs purchase originary and produced factors of production for cash, just as they sell products for cash. (2000, p. 110)

> [W]hether the structure of production remains the same depends entirely upon whether entrepreneurs find it profitable to reinvest the usual proportion of the return from the sale of the product of their respective stages of production in turning out intermediate goods of the same sort. . . . The continuance of the existing degree of capitalistic organisation depends, accordingly, on the prices paid and obtained for the product of each stage of production and these prices are, therefore, a very real and important factor in determining the direction of production." (Hayek 1931, pp. 48-49)

[16]"The loan market does not determine the rate of interest. It adjusts the rate of interest on loans to the rate of originary interest as manifested in the discount of future goods" (Mises 1998, p. 524). Also see Hayek (1931, p. 84) and Rothbard (1963, pp. 363-64).

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The point of this digression on method is to draw attention to the fact that while the loanable funds market provides the most visible manifestation of the interest rate, it is by no means the market in which the distribution of property is ultimately adjusted in accordance with intertemporal preferences of consumers. The markets on which this adjustment occurs are the markets for productive resources, especially labor and natural resource markets. The ultimate recipients of the supply of present goods represented by the money savings of the capitalists are the owners of the original factors of labor and natural resources who supply the services of their factors in return. Entrepreneurial bidding for the variety of factor services with the scarce supply of capital establishes a uniform rental price for each that includes a unitary discount rate on their prospective marginal value products which simultaneously distributes and coordinates these services across an integrated structure of production and establishes the price margins between the various stages of this structure.[17] The loanable funds market is not fundamental to this analysis of the Mengerian adjustment of the stocks of present and future goods that gives rise to the interest rate. It is, however, an important institution for lowering the costs of pooling and investing capital and for dividing and customizing risk-bearing and decision-making responsibilities among capitalist-entrepreneurs on the supply side of the market (Strigl 2000, pp. 110-11).

Although Garrison clearly understands all this, he nevertheless employs the loanable funds market as one of the three key elements of his capital-based macroeconomics along with the production possibilities frontier and the Hayekian intertemporal structure of production. While the loanable funds market construction, like the production possibilities frontier, is thus an expositional simplification designed to couch capital-based macroeconomics in concepts familiar to mainstream macroeconomists, its use in his explanation of the case of secular growth appears to camouflage an error in his analysis. As Garrison describes the secular growth process:

> Savers are supplying increasing amounts of loanable funds out of their increasing incomes; the business community is demanding increasing amounts of loanable funds to maintain a growing capital structure and to accommodate future demands for consumer goods that are growing in proportion to current demands. With ongoing shifts in the supply and demand for loanable funds, the equilibrium rate of interest, which also manifests itself as the ongoing rate of return on capital generally, remains constant. . . . The unchanging rate of interest . . . translates into an unchanging slope of the hypotenuse for the successive Hayekian triangles. The interest rate allocates resources among the stages of production so as to change the size but not the intertemporal profile of the capital structure. (pp. 54-55)

[17]For a description of how the pure interest discount is determined on factor markets, see Böhm-Bawerk (1960, pp. 299-312).

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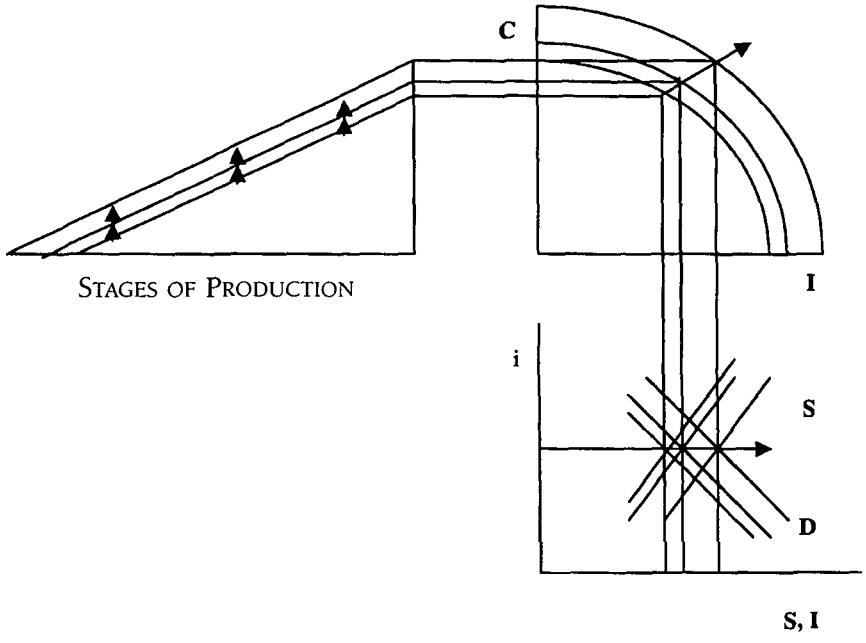
There are two problems with this characterization of the secular growth process. The first relates to Garrison's conceptualization of the market for savings as a market for loanable funds. On the supply side, why should consumers save more out of their growing incomes unless their relative valuations between present and future goods have indeed changed? After all, *ceteris paribus*, to accommodate the additional savings, the discounted rents of the original factor services must be bid up, causing a contraction in the price margins between the stages of production and, hence, a fall in the natural rate of interest that precisely reflects the decline in the social ratio of exchange between present and future goods. Garrison avoids this conclusion, however, by positing a simultaneous and proportional shift of demand for loanable funds on the part of entrepreneurs who seek to maintain a growing capital structure and to meet the anticipated expansion in future demands for consumer goods that accompanies the growth process.

Garrison's appeal to the demand side of the loanable funds market, however, exposes a second problem with his portrayal of the secular growth process. In maintaining that "the intertemporal profile of the capital structure" does not change during this process, he implies that the price margins between the stages also remain constant. (Abstracting from compounding, the constant slope of the hypotenuse of the broadening, but not lengthening, Hayekian triangles in Figure 1 below, reproduced from Garrison's [p. 54] discussion of secular growth, graphically illustrates the constancy of the natural

FIGURE 1



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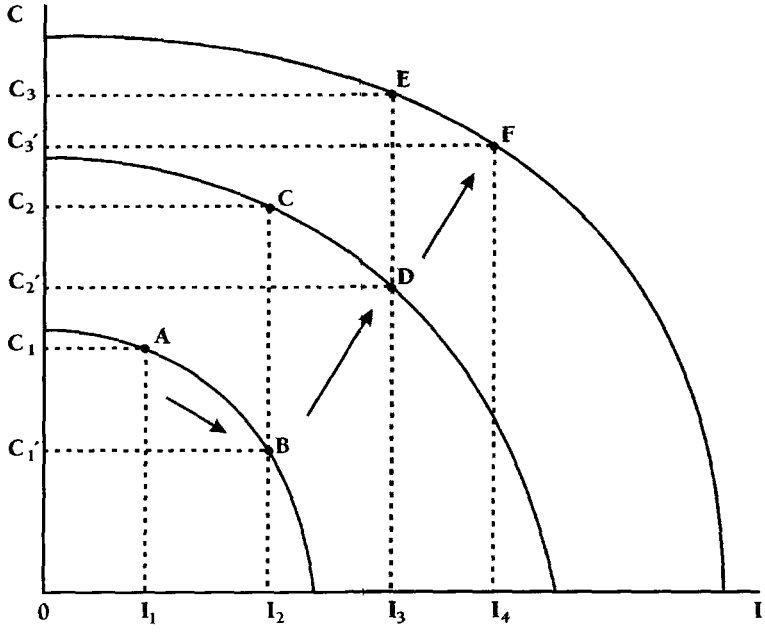
rate of interest.) From the ex ante viewpoint, then, there is no maladjustment in the distribution of time-dated goods to be corrected by a Mengerian-Striglian process. In other words, if the interest rate on the loanable funds market does not diverge from the natural rate of interest in production, what is the incentive for entrepreneurs to borrow and invest the additional funds, since additional investment will bring about a shrinkage of the spread between input and output prices causing the natural rate to decline below the loanable funds rate? Indeed, additional capital goods, which are the source of the growing real demands for future consumer goods, cannot be generated unless the time profile of the investment of the original factor services is lengthened. Given a labor force constant in quantity and quality, fixed stocks of natural resources and static technology, the production of more capital goods must entail the investment of labor and other relatively nonspecific resources for longer periods of time and a concomitant reduction in the natural interest rate, both reflecting a reduced social time preference rate.

Despite these criticisms of Garrison, however, it certainly is conceivable and even likely that modern capitalist economies will be characterized by ongoing net investment and a growing capital stock that coincides with an uninterrupted rise in living standards. But this will require a fall in time preferences as explained in the Robinson Crusoe model above. We can readily adapt one of the components of Garrison's capital-based macroeconomics apparatus to illustrate this development. In Figure 2 below, a capitalist market economy is depicted by a series of production possibilities frontiers

FIGURE 2



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(PPFs). The economy begins its evolution at point A on the southwestern-most PPF. This point represents a stationary state in which gross investment, $0I_1$, is equal to replacement investment with net investment equaling zero. Any point on this PPF, therefore, that lies to the northwest of point A represents a retrogressing economy featuring net disinvestment while points lying to its southeast denote a progressing economy with net investment. Now let us assume that there occurs a drop in time preferences resulting in a movement to point B as consumption falls from $0C_1$ to $0C_1'$ releasing resources for positive net investment equal to I_1I_2 . After a transition period during which the structure of production is adjusted, the PPF shifts rightward to the PPF containing the points C and D. Point C represents the new stationary economy in which the higher level of gross investment, $0I_2$, is just sufficient to permanently maintain an increased output of consumable goods equal to $0C_2$. However, the increase in real income and wealth that accrues in this process of capital accumulation in the form of net profits, higher factor rents, and increased interest returns induces a further fall in intertemporal preferences that drives the economy directly to point D. In this progressing economy, agents undertake net investment of I_2 I_3 at the cost of additional consumable output of $C_2'C_2$. Nonetheless, despite the ongoing net investment and the sacrificed consumption it entails, real income has grown sufficiently to permit living standards in the progressing economy at point D to exceed their levels at starting point B (and A). This second episode of net investment permits additional lengthening of the production structure that expands the economy's productive capacity even further as represented by the PPF containing points E and F. Once again the enhanced income and wealth generated by the capital accumulation process reduces the social ratio of exchange between present and future goods and stimulates further net investment redirecting the economy away from the stationary state at point E toward the progressing economy at point F, whose living standards nonetheless have risen with respect to those at point D.

We thus have a plausible explanation for the observed concurrence of ongoing net investment and rising living standards in modern capitalist economies that does not invoke technological progress and does not rely on a dubious notion of secular growth that apparently conflicts with the basic tenets of Austrian capital theory. However, Garrison may properly object that I have based my growth story wholly on the supply side of the present/future market and have not said a word about the demand side after roundly criticizing his account of it. Furthermore, without reference to the demand side, there can be no possibility of explaining the situation depicted in Figure 1 in which gross investment grows without altering the intertemporal profile of the capital structure. It is, therefore, an instructive analytical exercise to reproduce the exact outcome of the Garrisonian secular growth process while

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employing an alternative conceptualization of the present-future or "time," market that I believe is more in accord with Austrian capital theory.

If we follow Garrison (p. 36) in netting out the use of saved funds for consumption purposes from both sides of this market, then the ultimate demanders of present goods on the time market are the owners of the original factors of production. Restricting our focus to labor as the quintessential original factor, an increase in the labor force in the stationary economy, *ceteris paribus*, will increase the demand for present goods in the form of money savings, raising the natural interest rate and shortening (and widening) the structure of production. The process by which this adjustment comes about begins with a reduction in wage rates in labor markets to accommodate the increased supplies and falling marginal productivities of the various labor factors (which we assume, for the sake of argument, all increase proportionally). Entrepreneurs operating in lower-stage, especially consumer-good, industries will find that more labor-intensive techniques have suddenly become less costly and they will increase their demand for labor while decreasing their demands for the products of higher-stage industries. Furthermore, the newly employed laborers will spend their wages on consumer goods, further expanding the price margins in the stages of production closest to consumers. Conversely, the higher-stage industries will experience a reduction in or outright elimination of their positive price margins, because the effect of the decline in demand for capital goods on their revenues will more than offset the effect of the declining price of labor on their costs.

Ultimately, the natural rate of interest will thus rise throughout the economy, the marginal product of factors invested in more time-consuming production processes will bear a proportionally heavier discount, and production processes will be shortened. Although the marginal product of labor and real wage rates will be lower in the new stationary economy, aggregate income as well as the aggregate output of consumer goods will be higher due to the increase of the labor input. Reinforcing this increase in aggregate output and the output of consumer goods will be an increased quantity of savings induced by the higher interest rate which will act to partially offset the shortening of the production structure and the falling marginal productivity of labor. This is illustrated in Figure 3, where the rightward shift in the demand for savings reflecting the increase in the labor force causes an increase in the interest rate from i_1 to i_2 and induces an increase in savings and investment equal to AB.[18]

[18]The graphical representation of the fundamental "time market" in Figure 3 is adapted from Rothbard (1963, pp. 323-60). Although Austrian capital theorists have not devoted much attention to alterations in the structure of production emanating from the demand side of the time market, our analysis accords with Bresciani-Turroni's brief hint on the subject:

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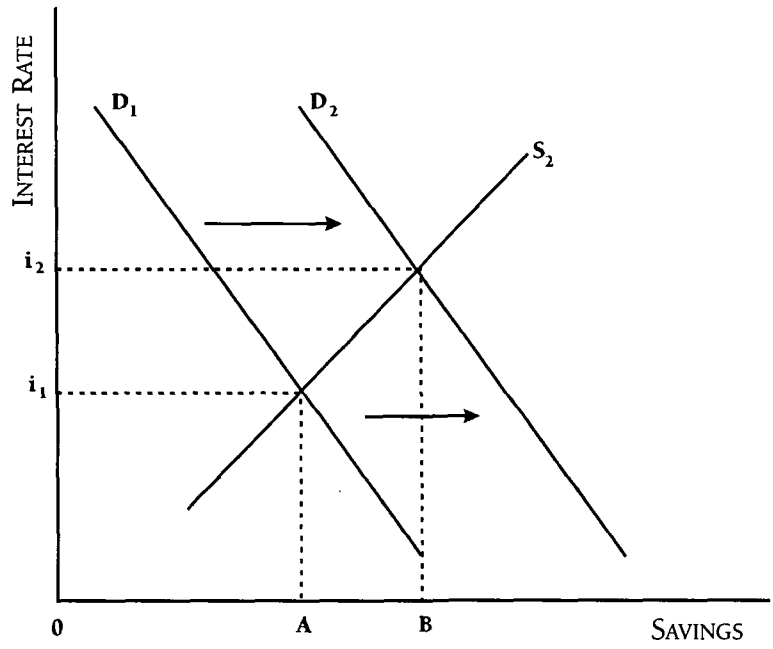
FIGURE 3



Now, if we assume that the supply of saved funds increases simultaneously and proportionally with the increased demand for present goods expressed by the enlarged labor force, then we get the Garrisonian result as displayed in Figure 1. The interest rate will remain constant as the supply and demand curves for saved funds continue to shift outward in tandem; capital investment will increase in amount, but the time profile of the capital structure will remain constant; total capital invested per laborer also will remain constant and, hence, so will the marginal productivity and real wage rates of the larger labor force; and the PPF will shift out from the origin while the point representing the expanding economy retains the same relative position on the curve indicating an unchanged ratio between consumption and investment. However, in this case, the graphical construction does not depict a Garrisonian secular growth process, because in my story the movement of the curves is driven by changes in the data, that is, in resources and time preferences.

> A realistic conception of saving ought not to start from the assumption of a constant population, because in fact every year new groups of workers enter the labour market in excess of those who withdraw from it. This additional supply of labour would tend, if other things remained equal, to depress wages, and therefore to shorten the average period of production, or, in other words, to render the economic structure of the country less capitalistic. (Bresciani-Turroni 1936, pp. 15-16)

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In concluding, I would like to emphasize two implications of my argument. First, the concept of secular growth as an uncaused phenomenon contradicts the Mengerian method of analyzing dynamic market processes as well as modern Austrian capital and interest theory and should be purged from capital-based macroeconomics. In its place should be substituted a causal analysis that accounts for the stylized fact of a steady secular growth trend in industrial economies in terms of the dynamic coordination of entrepreneurial plans with the historical development of time preferences, the size and quality of the labor force, natural resource endowments, and technological progress.[19] This substitution can easily be made without in the least affecting the basic structure of the Garrisonian analytical framework. Second, and more important, the analytical simplification of the loanable funds market, while it may be a useful component of capital-based macroeconomics in treating the effects of changes of preferences and policies that impinge on the supply side of the intertemporal market, is liable to be dangerously misleading when dealing with demand-side influences on the capital structure. Consequently, perhaps a richer conception of the time market could be formulated and incorporated into capital-based macroeconomics without seriously damaging its potential appeal to mainstream macroeconomists.

References

Böhm-Bawerk, Eugen von. 1960. *Capital and Interest.* Vol. 2. *Positive Theory of Capital.* George D. Huncke, trans. South Holland, Ill.: Libertarian Press.

Bresciani-Turroni, C. 1936. "The Theory of Saving." *Economica* (February).

Egger, John. 1994. "The Contributions of William H. Hutt." *Review of Austrian Economics* 7(1): 107-38.

Hayek, F.A. [1935] 1967. *Prices and Production.* 2nd ed. New York: Augustus M. Kelley Publishers.

Hoppe, Hans-Hermann, Jörg Guido Hülsmann, and Walter Block. 1998. "Against Fiduciary Media." *Quarterly Journal of Austrian Economics* 1(1):19-50.

Horwitz, Steven. 2000. *Microfoundations and Macroeconomics: An Austrian Perspective.* New York: Routledge.

Hutt, William H. 1974. *A Rehabilitation of Say's Law.* Athens: Ohio University Press.

——. 1977. *The Theory of Idle Resources: A Study in Definition.* 2nd ed. Indianapolis, Ind.: Liberty Press.

——. 1979. *The Keynesian Episode: A Reassessment.* Indianapolis, Ind.: Liberty Press.

[19] I am indebted to John P. Cochran for this point.

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Menger, Carl. 1981. *Principles of Economics.* James Dingwall and Bert F. Hoselitz, trans. New York: New York University Press.

Mises, Ludwig von. 1990. "The Position of Money Among Economic Goods." In *Money, Method, and the Market Process: Essays by Ludwig von Mises.* Richard M. Ebeling, ed. Norwell, Mass.: Kluwer Academic Publishers.

——. [1949] 1998. *Human Action: A Treatise on Economics.* Scholar's Edition. Auburn, Ala.: Ludwig von Mises Institute.

Rothbard, Murray N. [1962] 1993. *Man, Economy, and State: A Treatise on Economic Principles.* 2nd ed. Auburn, Ala.: Ludwig von Mises Institute.

——. [1963] 2000. *America's Great Depression.* 5th ed. Auburn, Ala.: Ludwig von Mises Institute.

Salerno, Joseph T. 1991. "The Concept of Coordination in Austrian Macroeconomics." In *Austrian Economics: Perspectives on the Past and Prospects for the Future.* Richard M. Ebeling, ed. Hillsdale, Mich.: Hillsdale College Press.

Selgin, George, and Lawrence H. White. 1996. "In Defense of Fiduciary Media-or, We Are Not Devo(lutionists), We Are Misesians!" *Review of Austrian Economics* 9(2): 83-107.

Snowdon, Brian, and Howard R. Vane, eds. 1999. *Conversations with Leading Economists: Interpreting Modern Macroeconomics.* Northampton, Mass.: Edward Elgar.

Strigl, Richard von. 2000. *Capital and Production.* Margaret Rudelich Hoppe and Hans-Hermann Hoppe, trans. (Auburn, Ala.: Ludwig von Mises Institute.

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CAPITAL, CREDIT, AND THE MEDIUM RUN

LARRY J. SECHREST

FILLING GAPS AND BUILDING BRIDGES

Time and Money should be read by all Austrian economists, as well as by those of competing schools of thought. It is a seminal contribution by a man who can plausibly be described as the pre-eminent macroeconomist currently working in the Austrian tradition: Roger W. Garrison. Moreover, it is a work that constitutes a significant advance in both the manner in which Austrian theory is presented and the means by which one can readily compare and contrast a wide variety of macroeconomic approaches. In other words, it offers the reader both pedagogical and analytical insights. Both of these will be achieved if one carefully examines the detailed diagrams that pervade the book. These diagrams, most of which are familiar to anyone who teaches university-level economics courses, are the most obvious way in which this book differs from most Austrians' work on macro issues. They are also, therefore, a likely point of attack for Austrian critics of Garrison's efforts.

Some may dismiss the book as a betrayal of the "purity" of verbal reasoning. So be it. While I may sympathize with such a sentiment, I must ultimately reject it. Graphical analysis can produce definite benefits. It forces one to identify the variables and parameters involved in whatever relationship one is examining and, thus, to distinguish movements along a curve from shifts of a curve. In addition, such analysis helps to reveal anomalies and contradictions in one's thinking as well as to impel one to make explicit any assumptions that were initially implicit. All of this can, of course, also be achieved in a verbal presentation, but is often less likely.

I believe *Time and Money* to be a notable achievement which furthers macroeconomic thinking by (1) making clear exactly why the Austrian emphasis on the capital structure is indispensable, (2) offering a taxonomy of

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all well-known approaches to macroeconomics, (3) revealing which elements are essential—and which are not—to the Keynesian and monetarist arguments, (4) demonstrating that expectations and time lags have long been an integral part of Austrian analysis, (5) reacquainting the reader with ideas like Keynes's "full investment" and Friedman's "plucking model," (6) applying Austrian principles to issues as diverse as tax reform, deficit spending, credit controls, and Ricardian Equivalence, and perhaps above all, (7) providing academics with graphical models that are familiar, tractable, and illuminating.

The pedagogical contributions of this book are invaluable, but one should not judge them merely as classroom tools. At the same time that Garrison's diagrams provide the Austrian economist with a succinct method of conveying to undergraduates the reasoning of people like Mises, Hayek, and Rothbard, they also perform an outreach service to other schools of thought. Garrison does a very thorough job of presenting various non-Austrian approaches. Moreover, he does this in terms that proponents of those approaches might themselves use. Then he demonstrates precisely where they go astray by comparing them to the richer, more robust analysis offered by Austrians. As a result, two important goals are achieved. First of all, mainstream economists are introduced to Austrian macro theory in a way that should make such theory fully intelligible to them. Second, the superior explanatory power of Austrian analysis is revealed, but in a manner that entreats rather than offends.

It is fair, therefore, to say that, in a sense, Garrison "builds bridges" over the chasm that seems to separate Austrians from other economists. This is not, however, an act of supplication. Garrison never retreats from his firm belief that the Austrian focus on the intertemporal structure of capital provides Austrians with superior theoretical tools. To put the matter in narrower terms, in the debate between Keynes and Hayek, "Hayek was right" (p. 5).

Speaking of Hayek, it is appropriate to point out that Garrison relies more on the Hayekian analysis of money, capital, and business cycles than on that of Mises or Rothbard. If for no other reason, this is because Garrison's graphical point of departure is the "Hayekian triangle" introduced in *Prices and Production* (1935). As is well-known, Hayek continued to develop his ideas on capital in *The Pure Theory of Capital* (1941). Despite the prominence of Hayek's triangles in *Time and Money*, Garrison makes it clear that "*Time and Money* is not the sequel to Hayek's *Pure Theory*" (p. 11). In fact, as will be discussed later, Garrison does not hesitate to depart from Hayek on occasion.

References to Hayek's early work brings to the fore another characteristic of *Time and Money*. In Garrison's own words, it employs "theory from the 1930s and pedagogy from the 1960s" (p. 12). And Garrison is right not to apologize for such seeming anachronisms. His book serves a needed remedial function in that it advances the theory beyond the point at which Hayek left

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it, and constructs pedagogical parallels to now-common visual tools like the Keynesian Cross, IS-LM, and aggregate supply-aggregate demand. It is in these ways that *Time and Money* fills in some important gaps.

The book is divided into twelve chapters, which are grouped into five parts. Part one is, unsurprisingly, introductory. It explains why the focus is on the capital structure rather than, for example, expectations. Capital is critical because it is the causal connection between short run and long run. Using a comment by Robert Solow as a point of departure, Garrison strikes at the vulnerable heart of mainstream macroeconomics. If the long run emerges from a sequence of short-run periods, how can it be that investment and consumption are positively related in the short run but negatively related in the long run? Keynesians look at the short run, and classical economists look at the long run; therefore, neither can give an adequate answer. But Austrians look at what might be termed the "medium run," a time period during which the capital structure can change dramatically. It is these intertemporal transformations which constitute the "real coupling" (pp. 4-5) between short and long runs. Without a sound capital theory, macroeconomics is incomprehensible.

Garrison rejects the modern obsession with expectation-formation. He points out that entrepreneurial expectations about relative prices are deeply embedded in the Austrian theory, rather than being based on some mythical "representative agent" and then tacked on like an afterthought, as in rational expectations. Moreover, he asserts that the relevant distinction is not between local and global information sets, but between "market savvy and theoretical understanding" (p. 27).

Part two presents the capital-based theory of the Austrian School, while part three examines the labor-based approach of Keynes. The sharp contrasts between the two that Garrison brings out "allow Keynes and Hayek to go head-to-head" (p. 13). Part four is devoted to the varieties of monetarism seen in the work of economists such as Milton Friedman, Edmund Phelps, Clark Warburton, and Leland Yeager. Since parts two through four are the primary substance of the book, they will be discussed in more detail below. Part five consists entirely of a short summary chapter.

Triangles and Frontiers

In order to portray a macroeconomics that is based on heterogeneous capital, Garrison employs three core diagrams: the market for loanable funds, a production possibilities frontier (PPF), and the Hayekian triangle. The first two are familiar to all economists, but the third is usually known only to Austrians. The Hayekian triangle is a right triangle the base of which measures production time–or, equivalently, the stages of production–and the height of which measures output in value terms. Here, production is construed as a continuous-input-point-output process, even though that implies

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that consumption requires no passage of time. Further, it must immediately be pointed out that "production time" itself has both value and time dimensions. "Two dollars worth of resources tied up in the production process for three years amounts to six dollar-years (neglecting compounding) of production time" (p. 49).[1] The slope of the hypotenuse of this triangle "reflects" but does not necessarily equal the rate of interest which clears the market for loanable funds.

If saving increases in the society (the rate of time preference falls), then the hypotenuse of the Hayekian triangle becomes flatter, its base becomes longer, and its height declines. In Garrison's PPF, the axes of which measure consumption (vertically) and investment (horizontally), one sees a movement along the frontier to the southeast. The market for loanable funds reveals this same qualitative change, in that the supply of funds increases and the equilibrium rate of interest falls. This sequence of events leads to a fully sustainable macro structure, because the interest-rate movement accurately reflects the change in time preference and the concomitant shift of emphasis toward more investment and less consumption.

One can even add stage-specific markets for labor to the three interconnected diagrams named above, as Garrison does. When time preferences fall and production becomes more "roundabout," the demand for labor in the early stages (higher-order goods) rises and the demand for labor in the late stages (lower-order goods) falls. Why? Because wage rates reflect the discounted marginal revenue product of labor, and interest rates have fallen. The interest rate effect on the discounted value of labor and thus on wage rates will be relatively greater the farther from the final goods that labor is used. Initially, therefore, wage rates in the early stages rise, while wage rates in the later stages decline. This induces a movement of labor away from the later stages and toward the early stages, which reverses the directions in which the respective wage rates are moving.[2] Wage rates in each of the stages ultimately return to their initial levels. Employment in the early stages is permanently higher, and employment in the later stages is permanently lower.

It would be correct, therefore, to say that "the change in the interest rate affects the pattern of employment and not the magnitude" (p. 66), a point also made by Hayek. This is of no small importance, because if there were a net

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[1]Garrison realizes that taking account of the effects of compounding would require an exponential function and a "triangle" with a nonlinear hypotenuse, but he rejects such a construction as being needlessly complex.

[2]Throughout the graphical analysis, Garrison assumes that labor is a nonspecific factor of production, although he is well aware that some workers possess firm- or industry-specific skills. This "human capital" he takes to be part of the capital structure (p. 65). Workers with these attributes would not change jobs. They would merely experience a rise or decline in their wage rates, depending on the stage of production in which they were employed.

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change in incomes, then the Keynesian paradox of thrift could appear. Lower consumption (more saving) would, in that case, imply a negative income effect on the supply of loanable funds, little or no increase in investment, and a movement inside the PPF.

The next task is to portray the effects of an expansion of money and credit by a central bank. Here, too, the market rate of interest falls due to the increase in loanable funds. However, the artificially low rate of interest causes the quantity of funds saved to fall and the quantity of funds invested to rise. This "drives a wedge between saving and investment" (p. 70). Ex ante investment exceeds ex ante saving, but ex post the two must of course be equal. This necessitates the appearance of "forced savings," following an initial period of overconsumption. The Hayekian triangle reveals the fundamental incompatibility involved here by virtue of the fact that its hypotenuse no longer is smoothly continuous. Because investors enjoy cheap credit, the lower end of the hypotenuse becomes flatter, that is, the early stages of production expand. But because consumers are spending at the same rate as before, and those who are employed are experiencing higher incomes, total consumer spending rises. Thus the upper end of the triangle's hypotenuse becomes steeper. Both investment and consumption are, temporarily, increasing.

Equivalently, one may say that available resources are being pulled in two directions: toward the production of both more higher-order goods and more lower-order goods. In the PPF diagram, Garrison portrays these forces as vectors. More or less simultaneously, one pulls to the north (more consumption), while the other pulls to the east (more investment). The net effect is a move to the northeast outside the production frontier. Garrison realizes that such movements outside a PPF are rather unconventional, but he defends it on the grounds that a PPF should be construed as representing combinations of consumption and investment that are sustainable. Economic expansions resulting from acts of credit creation by a central bank are not sustainable and therefore must be depicted by movements beyond the PPF.

The proposition that such expansions are only temporary and must eventually reverse direction has long been central to the Austrian theory of business cycles. However, Garrison's treatment helps to clarify an aspect of this process that some Austrians tend to overlook: Is the Austrian theory one of overinvestment or malinvestment? That is, given no change in time preferences (preferred rates of consumption versus saving), does the problem lie in the fact that too much has been invested, or in the fact that the investment is in the wrong stages of production? Garrison makes it quite clear that both are essential to the Austrian story. The malinvestment is what causes the expansion to be followed, despite any central bank efforts to forestall this, by a contraction of even greater magnitude. Producers of goods in the early stages of production compete for both complementary and substitutable resources

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against the producers of goods in the late stages. Both cannot win. And it is the producers of higher-order goods who must bear the brunt of the correction, because their plans are incompatible with consumers' unchanged time preferences. Therefore, the initial movement to the northeast and outside the PPF is necessarily followed at some point by a reversal to the southwest and back inside the PPF.[3] Why not simply back to the frontier at the point of exit? Because the artificially low interest rate gives the resulting output mix an "investment bias" (p. 71). A return to the PPF at the point of exit would represent an output level which was sustainable, but the output mix at that point would remain unsustainable. Further correction of the balance between lower-order and higher-order goods would be necessary.

Discussions of that corrective mechanism bring overinvestment to the fore. The economy "crashes" because unjustified investments in the early stages of production have been undertaken. The economy recovers slowly, and no doubt painfully, from the contraction because the overinvestment in the early stages of production is sure to involve at least some goods that are durable as well as being firm- or even project-specific. Liquidation of such goods, and the firms or projects employing them, will be a difficult and time-consuming process. Re-establishing a sustainable level and mix of goods will take time. Quick and painless adjustments are out of the question.[4] The Austrian theory of credit-created cycles involves both overinvestment and malinvestment. Malinvestment causes the contraction; while overinvestment causes the contraction to take time. "[P]olicy-induced malinvestment is the unique aspect of the theory . . . [however] over-investment is a critical enabling aspect of the theory" (p. 81).

In his explication of the capital-based approach to business cycles, Garrison pauses to comment on several side issues. I will mention only two here. First of all, he notes that if in one's analysis, one minimizes the role of malinvested capital, then the expectations-adjusted Phillips Curve provides a story quite similar to that of Austrians. There, too, monetary injections cause errors by market participants and lead to unsustainable movements beyond the PPF. However, the Phillips Curve approach, which is often treated as one of the pillars of monetarist thought, depends critically upon price-level movements that deceive workers regarding their real wage rates. Therefore, the capital-based, or Austrian, theory is empirically more robust as an explanation for periods like the mid- to late-1920s, when the price level in the United States exhibited no significant changes.

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[3]Strongly risk-averse savers are likely to drive the economy deeply within the PPF.

[4]If the corrections truly had been quick and painless, the economy would never have left the PPF. There would simply have been a movement along the frontier.

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Second, Garrison deals with two unavoidable aspects of recent developments in macro theory: expectations and time lags. From the market process-based perspective that all Austrians embrace, the mainstream approaches to expectations are highly artificial. Entrepreneurs, and indeed all market participants, possess information which reveals something about "underlying economic realities," but they "do not already have enough information about those realities to make the conveyed information irrelevant" (p. 77). Economic agents learn about the economy as events unfold. Their expectations about future conditions depend upon both their theoretical understanding of macroeconomic relationships and their concrete knowledge of specific events. Expectations are endogenous. Non-Austrians often treat the formation of expectations as an addendum to economic events. Austrians realize that expectations are "embedded" in the market process itself. Moreover, the elasticity of expectations regarding interest rates must be greater than zero, for there would be no credit-induced business cycles at all if that elasticity were zero.

What about time lags? Many macroeconomists think that questions about expectations can be translated into questions about the lag structure. For Austrians like Garrison, changes in interest rates certainly do change the structure of production, after some passage of time. How long is this passage of time? It is clearly greater than zero; otherwise there would be no cyclical phenomena at all. Garrison calls it "an intermediate lag, one long enough to allow a boom to get under way but short enough to prevent it from maturing into real growth" (p. 79). To call it the "medium run" seems very appropriate. Here too, as with expectations, the lag structure emerges from the market process of discovery.

Deficits, Debt, and Risk

The analysis of unsustainable booms caused by credit expansion may be the most dramatic use of Garrison's capital-based model, but it is by no means the only such use. To demonstrate the broad applicability of the model, Garrison also surveys several issues of a fiscal or regulatory nature. What, for example, of Ricardian Equivalence, the notion that it is irrelevant whether a government finances its spending by issuing more debt or by raising taxes? To examine this, Garrison assumes that neither the spending itself nor the possible new taxes will, in themselves, alter the intertemporal structure of production, thus any such alterations will be attributable to the issuance of debt. As likely candidates which might meet that criterion, he suggests "humanitarian foreign aid" and a "simple lump-sum tax," respectively.

Diagrammatically, the issuance of government debt increases the demand for loanable funds and raises the market rate of interest. Some private

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investors are "crowded out" of the market as a result. The economy moves along its PPF to the northwest. That is, consumption rises, being stimulated by the tax reduction made possible by the increase in debt, and investment falls. In the Hayekian triangle, the higher interest rate produces a steeper hypotenuse, which signifies fewer resources devoted to the early stages of production and more to the later stages. This slows the growth rate, or, in other words, present consumption expands at the expense of future consumption. "To this extent, the debt burden is shifted forward" (p. 87).[5] Of course, Garrison recognizes that, if the new government debt is perceived as net wealth by the holders of that debt, then the movement may be out beyond the PPF. The commitments of entrepreneurs to long-term investment projects could reinforce this effect. Thus, one may say that debt-financed government spending possesses a "political kinship to monetary expansion" (p. 88).

Garrison also investigates credit controls and tax reforms in the light of his capital-based model. With usury laws which impose an interest-rate ceiling on consumer loans (as advocated by Adam Smith), the effects are qualitatively identical to those of a decline in the rate of time preference. The ceiling on consumer loans means that more funds are available for business investment, so the supply of loanable funds increases and market rates of interest fall. The hypotenuse of the Hayekian triangle becomes flatter, lengthening the production process. The economy moves along its PPF to the southeast. That is, consumption falls and investment rises. But what if the ceiling were a broadly based one that affected all credit transactions? Here one will see a disparity between the quantity of funds demanded and the quantity of funds supplied. As saving and investment decline, consumption rises. The structure of production becomes shorter, and the economy moves to the northwest along its PPF. The effects on the economy are similar to those that result when the government finances spending by issuing more debt.

There is an important variation on the interest-rate-ceiling scenario discussed above. What if the central bank accommodates the shortage of credit? The interest rate is artificially low, but entrepreneurs can get all the credit they demand at that rate, despite the smaller quantity of funds supplied by savers. Here the result is very different. The hypotenuse of the Hayekian triangle becomes flatter, investment in the early stages of production takes precedence over the later stages, and the economy moves out beyond its PPF to the northeast. This is unsustainable because actual saving remains less than investment, so it is necessarily followed by a collapse into the interior of the PPF. This should sound familiar. "Except for the differing announcement effects,

[5]In short, Garrison disagrees with Mises's defense of Ricardian Equivalence (Mises 1983, p. 168; 1966, p. 227). In fact, he cites Leland Yeager's comment that Mises errs in being insufficiently subjectivistic on the matter.

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the market process associated with papering over the credit shortage caused by an interest-rate ceiling, and the market process associated with a credit expansion are indistinguishable" (p. 101). The only advantage lies with the former. In that case, there is an announcement effect which might at least warn entrepreneurs of the underlying problem.

As far as "tax reform" is concerned, Garrison addresses only one contrast, though an important one given his framework of analysis: a tax on income versus a tax on consumption.[6] If the same total tax revenue is to result, and an income tax is replaced by a consumption tax, then the shape of the PPF will change. The vertical intercept (consumption) will decrease, and the horizontal intercept (investment) will increase. The structure of production shifts toward the early stages. That is, there will be more capital goods and fewer consumer goods. Conventionally put, the rate of economic growth rises.

Garrison argues that the change in the taxing method will have no first-order effects on the market rate of interest; therefore, the link between the slope of the Hayekian triangle and the market for loanable funds will be severed. He concludes that there are no compelling reasons to prefer one sort of tax over the other. "Each is deficient when judged by the standard set by the other" (p. 105).

In a relatively brief chapter 6, Garrison discusses, but offers no diagrams to illustrate, the role of risk in episodes of boom and bust, including those which have appeared in various Asian countries in the past two decades. Here his focus is on that component of interest rates known as the risk premium, in contrast to the more common concern with the inflation premium. Fiscal policy, monetary policy, and various regulatory actions can all affect both the level of risk in the economy and the degree to which particular economic agents bear the full costs of their risky actions. However, the principal problem lies with government deficits and the means by which they are financed. The unpredictability of government deficits increases the riskiness of the economy as a whole and of credit markets in particular. However, that increased risk may neither be perceived accurately nor have its costs borne by the appropriate actors.

In order properly to grasp the magnitude of a deficit, Garrison recommends using the deficit-to-saving ratio instead of the usual deficit-to-GNP ratio. By this standard, the U.S. deficits of the 1980s and 1990s were indeed "chronically large." Moreover, as deficits escalated during recent decades, they were financed in ways that made the concomitant increase in risk progressively less visible. "The government has gone from taxing directly to borrowing domestically to monetizing debt to exporting debt to hiding debt" (p. 117).

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[6]Garrison sees these two types of taxes as having significantly different effects. Murray Rothbard (1977, pp. 108–11) argued that consumption taxes were really taxes on income, just at a lower effective rate.

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THE KEYNESIAN SYSTEM

The task of unraveling "what Keynes really meant" has long been a cottage-industry unto itself in the economics profession. In chapters 7, 8, and 9 Garrison succeeds in clearing away the debris of Keynesian thinking by, first, concentrating on what Keynes himself said and, second, separating the primary elements from the secondary. A key point of departure is the distinction Keynes made between cyclical and secular unemployment. The first supposedly requires countercyclical policies; the latter necessitates fundamental social "reform." The first reveals Keynes as a meddler; while the latter reveals Keynes as a socialist, or perhaps more precisely, a fascist.

To illustrate the labor-based approach of Keynes, Garrison retains the PPF and the loanable funds market used earlier. To these he adds four new elements: the market for (homogeneous) labor, the familiar Keynesian Cross, a diagram that reflects the ratio of labor income to total income (assumed constant by Keynes), and a diagram showing the relation between the level of employment and the income accruing to labor.[7] The chain of events that results in a cyclical contraction is precipitated by an unpredictable, sudden decrease in the demand for investment funds (or a "collapse in the marginal efficiency of capital"). The demand for labor falls, but the wage rate remains the same, so there is a surplus of labor. Labor income, and therefore total income, both decline. As income falls, (1) the supply of loanable funds also falls, so the market interest rate does not change, and (2) consumption demand decreases, which exacerbates the problem, driving the economy into a contractionary spiral. In terms of the PPF, the movement is not along the frontier but deep into its interior. The Keynesian "solution" is, of course, expansionary fiscal and monetary policies, though these supposedly stabilizing actions may, in practice, be destabilizing (p. 157).

Garrison's understanding of the Keynesian system is both profound and precise. Several noteworthy observations emerge from his close attention to the system's details. For example, Garrison demonstrates that the rigidity of wage rates (either nominal or real) is not necessary to the argument, despite the considerable ink which textbooks usually devote to that issue. Given the fixed structure of production and an income-effect that swamps any real-balance effect in the market for loanable funds–both of which Keynes assumes–a collapse of investment demand would indeed produce a contraction. In addition, Garrison points out that it is not a "fetish for liquidity" that causes the problems, although increased "hoarding" does make things worse because it

[7]Here labor income is positively, and strictly proportionally, related to the level of employment because of Keynes's assumption of wage-rate rigidity. Garrison quite correctly points out that Keynes meant the real wage rate. Given the way Keynes modeled the economy, cyclical problems would still arise, even if commodity prices and nominal wage rates were perfectly flexible, because they would move together.

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decreases consumption spending. Per Keynes, the contractionary catalyst is too little investment, not too much saving.

It is the issue of saving versus consumption which provides "the clearest contrast between the Keynesian and the Hayekian visions" (p. 160). "For Keynes, consumption is one of the two components of expenditures. . . . For Hayek, consumption is the final stage of a time-consuming production process" (p. 165). Since Keynes, by assumption, excludes changes in the structure of production from consideration, his system is incapable of reflecting changes in individuals' time preferences. Present consumption and future consumption are not alternatives; they move in lockstep together. In effect, the Keynesian model presupposes that the market process is incapable of dealing with shocks such as a decrease in investment demand. Thus, with Keynes, one sees both a wage rate and an interest rate which clear their respective markets, but which are nonetheless problematic. "Keynes elevated the difficulties of an economy-gone-wrong to the status of a general theory" (p. 144).

To Keynes's way of thinking, things were more likely to go wrong the closer one got to laissez-faire capitalism. However, even if countercyclical policies worked perfectly, capitalism was still to be condemned. The chronic problems were too high a rate of interest, too little investment, and thus too much secular unemployment. As Garrison explains in chapter 2, Keynes ultimately yearns for radical social reforms which effectively constitute an abandonment of capitalism. To achieve his ideal of "full investment," Keynes wants the State to collectivize the processes of saving and investing so that capital will (somehow) cease to be scarce, the interest rate will be more or less zero,[8] all income will accrue to labor, and employment will be maintained at a high level.

Keynes thought this necessary because capitalists conspire to keep capital scarce and interest rates high. In the spirit of Marx, and the socialists of all parties, Keynes considered capitalists to be the exploiters of labor, rather than its benefactors. Garrison quite effectively demonstrates that it is this issue of social reform which lies at the heart of Keynes's critique, not the issue of cyclical fluctuations. He furthermore suggests that the failure to recognize that fact has helped to produce so many different, and confusing, interpretations of Keynes. Upon reflection, "the decades of difficulties in identifying that [Keynesian] message become understandable" (p. 185).

Money as the Center of Attention

In the previous chapters of the book, money has been quietly ubiquitous. As Garrison says, in an important sense, it is "on every axis of every diagram" (p. 52). In chapters 10 and 11, however, money moves to the forefront, because

[8]Keynes did allow for some small risk premium as well as a small return to those who exhibit skill in managing capital goods.

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these two chapters are devoted to the related topics of monetarism and monetary disequilibrium theory.

With monetarism, Garrison's perspective has an interesting point of departure. He argues that monetarism, though clear and correct about the long-run effects of monetary expansion, is ambiguous and vulnerable when it comes to short- and medium-run effects. This may help explain why monetarism can be illustrated using a variety of diagrammatic frameworks.[9] Specifically, does an increase in the money supply lead to an increase in real output (Q) or an increase in the price level (P)? If monetarist thought is captured by the expectations-adjusted Phillips Curve, then prices and output are positively related. However, that seems to contradict the message of the equation of exchange, long a hallmark of monetarism, in which prices and output are inversely related (given an unchanging income velocity of money).

Garrison solves the dilemma by suggesting that both are correct, but at different stages of the economy's reaction to an unsustainable credit expansion. In other words, he effectively links monetarism with Austrian theory. Those two approaches are "parallel and complementary theories, each dealing with different but related aspects of a policy-induced artificial boom. . . . Overinvestment and malinvestment have a basis in monetarist as well as in Austrian theory" (pp. 200-01). Nevertheless, Garrison does not ignore the differences that exist. Obviously, monetarists focus on labor markets, while Austrians look at capital markets. According to monetarists, market interest rates fall (but the decline is not particularly important) because excess money balances are spent on bonds and other financial instruments. According to Austrians, those rates fall (and the decline is of fundamental importance) because the supply of credit available to entrepreneurs rises.

Ultimately, the biggest difference between the two theoretical approaches involves the structure of production. Monetarism adopts the Keynesian assumption of a fixed structure, that is, the rate at which present consumption is traded for future consumption remains constant, even though aggregate production of both capital goods and consumer goods does change. In the PPF diagram Garrison shows this as a movement along a linear demand constraint. Monetary expansion drives the economy outside the frontier; subsequently, the economy contracts back to the frontier. However, at all times the movements are along the demand constraint.[10] One might say, then, that monetarists offer an adequate explanation of why the boom is unsustainable. On

[9]These include the four-sector model of Don Patinkin, the expectations-adjusted Phillips Curve, the labor-based model of Keynes, Friedman's "plucking model," and even the capital-based Austrian approach. As Garrison notes, "Monetarism is virtually framework-independent" (p. 210).

[10]Garrison incorporates into this a real cash-balance effect by maintaining the slope of the demand constraint but shifting its vertical intercept.

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the other hand, they ignore issues involving the intertemporal structure, so they can provide no better than a weak reason why the correction phase takes so long. Given that the economy moves in and out along the demand constraint, it would seem that the correction phase should be brief. The fact that it usually is not brief must be counted as a deficiency of monetarism.

Garrison does not overlook the "other face" of monetarism: monetary disequilibrium theory. His focus is on Friedman's "plucking model"[11] and the complementary work of Clark Warburton and Leland Yeager. Unlike the version of monetarism examined in the previous chapter, the constraint is on the supply side instead of the demand side. Monetary contractions "pluck" the economy downward, followed by recovery to the trend rate of growth in real output. The statistical result is that recovery periods (or booms) are more highly correlated with the magnitude of the preceding contraction than with that of the *succeeding* contraction.

Garrison offers two provocative judgments regarding this vision of the economy. First, he is convinced that this—and not the expectations-adjusted Phillips Curve—is the essence of monetarism. The Phillips Curve argument does not, for example, really reflect Milton Friedman's analysis of the economy. He "was simply taking on his adversaries on their own terms" (p. 203). For Friedmanite monetarists, it is output that rises first, not prices. Second, even though some highly aggregated data seem to support Friedman, in fact the "Plucking Model provides no evidence against the Austrians" (p. 228). Friedman looks at movements in some aggregate measure such as GDP; Hayek or Mises would look at the changing proportions within the aggregate. Early in the expansionary boom, for instance, total investment spending might rise little if at all because investment in the early stages of production would increase while investment in the late stages fell. Tracking total investment without noting the changes in its components would give an economist little reason to think that an unsustainable expansion was under way.

A Summary Judgment

Time and Money is a multifaceted achievement. Within its pages the reader will encounter business cycle theory, capital theory, comparative economic thought, and many contemporary macroeconomic topics, as well as the tools needed to convey all of it to university students. Academic economists, regardless of school of thought, should welcome this book. It is lucidly written and well-organized, and every page reflects the years of thought that Garrison has devoted to these subjects. One manifestation of this is the fact that throughout

[11]Despite the attention he devotes to it, Garrison believes the plucking model to be of "limited significance" (p. 230).

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the book he successfully navigates between the Scylla of pedagogical simplicity and the Charybdis of theoretical complexity. The net result has just the right proportions of the two.

Are there any aspects of the book that justify negative comment? Yes, but they are relatively minor elements. For example, I would very much like to see Garrison weave the concept of the wages- or subsistence-fund into the tapestry he produces. He mentions it in passing (p. 58), but never returns to it. This deserves to be mentioned, because the wages-fund idea can significantly enhance one's understanding of why it is that the credit expansion is unsustainable.[12] The issue of human capital and how it is affected by changes in market interest rates also deserves a somewhat longer treatment. There clearly is a structure of human capital, just as there is one for physical capital, and indeed the two are related though not identical. Both involve heterogeneous factors, reflect individuals' time preferences, and require for success that complementary factors be forthcoming at the appropriate time. Furthermore, considerations of human capital could bring the business cycle theories of monetarists[13] closer to that of Austrians, and that similarity is a topic that interests Garrison. Finally, I wish Garrison had pursued one of his own questions further. After recognizing that Friedman's true position is illustrated by the plucking model, he asks, "But what is, after all, Friedman's theory of the business cycle?" (p. 231). Since the plucking model is data in search of a theory, it appears to me that those monetarists who eschew the Phillips Curve approach are left with no theory of cycles at all.

"Hayek gave us a good start on capital-based macroeconomics. The insights wrapped up in those triangles and the prospects for extensions and application are yet to be fully developed or fully appreciated" (p. 120). That research project is, indeed, not yet complete. Nevertheless, it seems undeniable that *Time and Money* constitutes a giant step in the right direction.

References

Hayek, Friedrich A. [1931] 1935. *Prices and Production.* London: Routledge and Kegan Paul.

——. 1941. *The Pure Theory of Capital.* London: Routledge and Kegan Paul.

Mises, Ludwig von. [1919] 1983. *Nation, State, and Economy: Contributions to the Politics and History of Our Time.* Leland Yeager, trans. New York: New York University Press.

——. [1949] 1966. *Human Action: A Treatise on Economics.* Chicago: Henry Regnery.

[12]For a comprehensive exploration of the wages-fund and its role in Austrian business cycle theory, see Strigl (2000).

[13]This is probably only true of those monetarists who employ the expectations-adjusted Phillips Curve.

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Rothbard, Murray N. [1970] 1977. *Power and Market: Government and the Economy.* Kansas City: Sheed Andrews and McMeel.

Strigl, Richard von. [1934] 2000. *Capital and Production.* Margaret Rudelich Hoppe and Hans-Hermann Hoppe, trans. Auburn, Ala.: Ludwig von Mises Institute.

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Rethinking Time and Money at the Beginning of the 21st Century

Ludwig Van den Hauwe

I gratefully accept the editors' invitation to present a few reflections upon Dr. Garrison's *Time and Money: The Macroeconomics of Capital Structure*. Since other contributors to this special issue of the *Quarterly Journal of Austrian Economics* will critically discuss several aspects of the book, I will not offer an exhaustive and systematic overview of the book's content. After offering a few preliminary remarks, I will immediately pass on to discussing in somewhat more depth two particular topics. One relates to what I consider to be one rather questionable way in which Garrison's construction deviates from established modes of thought in Austrian economics; the other relates to Garrison's somewhat unbalanced treatment of the Keynesian and Austrian paradigms, an aspect that I consider equally problematic.

Time and money constitute the blind spots of classical or standard economics.[1] Acknowledging this fact and taking it as a starting point for a renewed reflection upon the themes and problems that were of central importance during the important interwar debates remain as important today as ever. The classical model was essentially one of barter. Keynes and Hayek had presented two related challenges to classical economics: the role of money and the role of expectations.[2] Hayek had been clearly implying that Say's Law applies only to the natural economy and not to the monetary economy. Garrison elaborates on an illuminating metaphor Hayek had suggested in this respect, namely that "money by its very nature constitutes a kind of loose joint in the self-equilibrating apparatus of the price mechanism which is bound to impede its working–the more so the greater is the play in the loose joint" (Hayek 1941, p. 408). As Garrison (p. 52) explains: "The Austrian theory of boom and bust, which presupposes an essential loose-jointedness,

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[1]See also, from a somewhat different perspective, Sapir (2000) *Les trous noirs de la science économique* with the telling subtitle: *Essay sur l'impossibilité de penser le temps et l'argent.*

[2]See also Cochran and Glahe (1999).

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identifies a systematic misallocation of resources that could not possibly characterize a tight-jointed system."

Nevertheless, even as late as in his *Three Elucidations of the Ricardo Effect* Hayek (1978, pp. 165-78) had refrained from treating the intricate questions surrounding the role of expectations in any systematic or satisfactory manner—while all the time recognizing their crucial importance.[3] Garrison's treatment of these questions is outstanding, however, and must be considered a highlight in the Austrian literature. For the first time, Hicks's (1967) challenge is satisfactorily dealt with (pp. 76-83).

Hicks had objected:

> Hayek's model does engender a process; some kind of lag (or lags) must therefore be implicit in it. Where is the lag to be found? . . . If there are no lags in market adjustment, the time-structure of production is irrelevant to the Cumulative Process; for there will not be time, before equilibrium is restored, for the structure of production to be changed. What then was Hayek's lag? (1967, p. 207)

In Garrison's construction there is no lag between earning and spending. There is, however, some scope for the expansion of output in all stages of production. As Garrison (2001, pp. 71-72) points out, the tug-of-war between investors and consumers that sends the economy beyond its production possibility frontier pulls the Hayekian triangle in two directions, that is, the triangle is being pulled at both ends—by cheap credit and strong consumer demand—at the expense of the middle. But it is not strictly necessary to suppose that both tendencies are *not* taking place simultaneously, that is, there is no need to postulate the existence of a lag *in this sense*. The (limited) scope for increased output at all stages translates into the scope for misallocations *among* stages. There is a bias in the direction of investment that is directly related to the particular manner in which the new money is injected. Credit expansion implies an investment bias.

Nevertheless, it cannot be simply assumed, much less taken for granted, that in the face of a monetary expansion, an elasticity of expectations of zero will apply. In this sense, the market process may—and often will—entail the existence of a lag. Mises had already pointed out, responding to an objection by Lachmann, that "without fairly elastic expectations there can be no crisis of the Austro-Wicksellian type" (Mises 1943, p. 251).

Critics like Hicks (1967) had been assuming that, in the face of a monetary expansion, an elasticity of expectations of zero applies. On the one hand, Austrian theory can accommodate the insight that the answer to the question of whether and to what extent the elasticity of expectations with respect to the

[3]See Van den Hauwe (2001, p. 313).

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interest rate is greater than zero, is predominantly an empirical issue. On the other hand, Austrians would typically want to argue that the assumption of an elasticity of expectations with respect to the interest rate being greater than zero is a plausible one. It is an implication of the very notion of "market process" that the market works but that it does not work instantaneously.

It should be pointed out that in other respects, too, Garrison succeeds in going considerably beyond simply restating old debates. In chapter 5 of the book he demonstrates the relevance of capital-based macroeconomics beyond its application to the business cycle by discussing a variety of fiscal and regulatory issues (pp. 84-106). In chapter 6 Garrison modifies Hayek's theory of boom and bust by focusing attention on the risk premium component of the interest rate and then retells it in a way that sheds light on a number of contemporary macroeconomic problems (pp. 107-22).

Garrison clearly brings out the essential difference between the Keynesian and the Hayekian visions of the macroeconomy. At the most basic level this difference relates to the respective judgments about the existence–or non-existence–of a spontaneous order at work. Whereas Keynes's labor-based macroeconomics essentially leaves us with a macroeconomics of market failure, Hayek's intertemporal structure of production allows us to understand how it is possible for a market economy to accommodate the trade-off between consumption and investment.

In this framework it is obviously of crucial importance to trace out consistently the consequences of changes in intertemporal preferences and their implications for the intertemporal allocation of resources, that is, the implied capital restructuring and the accompanying auxiliary labor-market adjustments. This brings me to my first critical reflection.

In Figure 4.3 on page 65 Garrison describes the auxiliary labor-market adjustments accompanying a capital restructuring following changes in intertemporal preferences while referring to Hayek's concept of a "family of discount curves" (Hayek 1935, p. 80; 1941, p. 290) with which Hayek tracks the differential changes in labor demand in five separate stages of production.

As Garrison rightly points out, increased saving has two separate effects on labor demand. The two concepts at play are *derived demand* and *time discount*. On the one hand, labor demand is derived demand: a reduction in the demand for consumption goods implies a proportionate reduction in the labor that produces those consumption goods. On the other hand, like all factors of production in a time-consuming production process, labor is valued at a discount: the reduction in the interest rate lessens the discount and hence increases the value of labor. In the late stages of production, this effect is negligible; in the earliest stages of production, it dominates. The two effects work in opposite directions–with the magnitude of the time-discount effect increasing with temporal remoteness from the final stage of production. Together, they change the shape of the Hayekian triangle (p. 64).

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In general and for any given stage of production, the specific factors undergo price adjustments and the nonspecific factors undergo quantity adjustments. Labor is here treated as a wholly nonspecific factor of production, but one that has to be enticed by a higher wage rate to move from one stage to another. Garrison assumes that initially the wage rate falls in the late stage and rises in the early stage but that after the pattern of employment fully adjusts itself to the new market conditions–with workers moving from the late stage to the early stage–*the wage rate returns to its initial level.*

Now this is a result that we would not directly expect. Any student of the Austrian School, from Böhm-Bawerk down to Hayek, is familiar with the reasoning according to which the length of the period of production varies directly with real wages and inversely with the rate of interest.

Garrison assumes that labor is employed in all stages of production but that it is neither so predominantly concentrated in the early stages of production that the wage rate rises when the interest rate falls nor so predominantly concentrated in the late stages of production that the wage rate falls along with the falling interest rate (pp. 66-67). He writes:

> Of course, in particular applications, if labor is for some reason believed to be disproportionately concentrated in early stages or in late stages, then Figure 4.3 must be modified to show the corresponding change in the wage rate. (p. 67)

However, after the capital restructuring, the proportional distribution of labor among stages will have changed in the direction of a relatively greater concentration of labor in early, capital-intensive stages of production. This is one reason why we would expect the wage rate to be higher after the restructuring instead of returning to its initial level.

This is also brought out by Hayek's presentation from which it is clear that the discounted value of the marginal product of the (nonspecific) factor will *necessarily* be higher than it was before (Hayek 1941, p. 290).

Garrison is aware that his reckoning deviates from conceptualizations found in the mainstream literature. Assuming constant returns to scale and fixed proportions, and with no substitutability possible, Samuelson had discussed the fundamental trade-off relation between the wage and profit level in terms of "the Factor-price Frontier":

> There is always a tradeoff between the wage and profit level: in the absence of innovation both cannot go up; and whatever the pattern of innovation, both cannot go down, since a simultaneous declining rate of profit and an immiserization of the wage earner would be arithmetically impossible in the stipulated technology. (Samuelson 1962, pp. 195-96)

What does it mean, in this reckoning, to stipulate that some capital goods–say beta–are more "round-about, mechanized time-intensive" than an alternative process, say alpha? According to Samuelson:

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> This, and no more than this: alpha will be used at very high interest or profit rates in preference to beta; but if the interest were lower . . . society would let alpha wear out and put all its resources into the gross capital formation of beta. (Samuelson 1962, p. 198)

Garrison recognizes that the pattern of change he depicts stands in contrast to the pattern that characterizes Samuelson's analytics (p. 66). He is confident, however, that his conceptualization is consistent with Hayek's (p. 65). Garrison's claim that his reckoning is consistent with the one shown by Hayek (1935, p. 80) seems questionable.

I will argue that in fact Garrison's approach represents a rather radical rupture from traditional and established modes of thought within Austrian economics.

In *The Pure Theory of Capital* (Hayek 1941), a figure similar to the one given in *Prices and Production* (Hayek 1935, p. 80) can be found. In the context of a slightly involved presentation, Hayek there wrote:

> The discounted value of the marginal product of the factor (or its price in terms of consumers' goods), indicated by the distance from the base to the line ending at p_1, will *necessarily* be higher than it was before. (1941, p. 290, emphasis is mine)

Before Hayek Böhm-Bawerk had arrived at the conclusion that "[t]he interest rate in a given economy will rise in inverse ratio to the subsistence fund" (1959, bk. 4, chap. 3, p. 365).

However, in Böhm-Bawerk's numerical examples the wage rate varies directly with the length of the period of production and inversely with the interest rate.[4] It will be remembered that Stigler commented upon these pages of Böhm-Bawerk's *Capital and Interest* as follows:

> This last section on the determination of the interest rate is his very best economic theorizing. It is much more lucid, consistent, and penetrating than the analyses of distribution, production, and discount of the future. (Stigler 1994, pp. 226-27)

Thus, Garrison's suggestion that after a capital restructuring "the wage rate returns to its initial level" (ibid., pp. 64-65) is at odds not only with Hayek's reckoning of these matters but also with Böhm-Bawerk's.

It is this writer's conjecture that the "anomalous" conclusion Garrison reaches in Figure 4.3 (p. 65) with respect to the wage rate returning to its initial level relates to a particular aspect of his construction: the attempt to separate—at least conceptually—the "secular growth" aspect from the "changes in intertemporal preferences" aspect when discussing economic growth. This is a criticizable strategy.

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[4]In a similar sense, see Stigler (1994, p. 222).

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Garrison recognizes that "Historically, increasing wealth has typically been accompanied by decreasing time preferences" (pp. 54-55). He adds, however:

> The macroeconomics of secular growth provides a more realistic baseline for analyzing particular changes in preferences or policies. In putting the graphics through their paces, however, the secular component of growth will be kept in the background. Changes in intertemporal preferences as well as policy changes will be analyzed on the assumption that we begin with a no-growth economy. With this simplifying assumption, the movement of the macroeconomy from one equilibrium to another will sometimes involve an absolute reduction in some macroeconomic magnitudes. Current consumption, for instance, might decrease while the economy's capacity to satisfy future consumer demands is being increased. In the fuller context of ongoing secular growth, the absolute decrease in consumption would translate into a reduced rate of increase in consumption. More generally, the macroeconomic adjustments required by some particular parametric or policy change are to be superimposed (conceptually if not graphically) onto the dynamics of the ongoing secular growth. (p. 55)

Apparently, Garrison holds the idea that there is no *necessary* or *conceptual* link between economic growth and changes in intertemporal preferences. Both may be conceptually and graphically separated, even if only for purposes of exposition, and then again "superimposed."

Is it appropriate to conceive of this link as *merely historical*–that is, contingent and accidental, so to speak–or is it itself a *necessary, conceptual* link?

As it seems to this writer, Garrison's suggestion works only in one direction. It may well be true that the notion of a progressing economy as such does not necessarily presuppose *changes* in intertemporal preferences, that is, graphically speaking, a change in the shape of the Hayekian triangle. It seems to be a necessary and sufficient condition for economic growth that saving exceeds capital depreciation. In Dr. Garrison's words:

> Secular growth occurs without having been provoked by policy or by technological advance or by a change in intertemporal preferences. Rather, the ongoing gross investment is sufficient for both capital maintenance and capital accumulation. (p. 54)

On the other hand, however, it is more difficult to conceptualize that changes in intertemporal preferences–and, more particularly a decrease in time preference–can be conceived *independently* of the anticipated growth of wealth over time. In the minds of the actors who change their intertemporal preferences in this sense, the intended increase of wealth over time is necessarily part of the act, so to speak. Foregoing present satisfaction would be pointless if not linked to greater satisfaction in the future.

As Mises wrote:

> Saving, capital accumulation, and investment withhold the amount concerned from current consumption and dedicate it to the improvement of

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> future conditions. The saver foregoes the increase in present satisfaction in order to improve his own well-being and that of his family in the more distant future. (Mises 1998, p. 840)

Even if no conceptual contradiction is involved in the notion of "secular growth with assumed interest-rate neutrality," it seems difficult to conceive of a change in intertemporal preferences, in the sense that people become more future-oriented, if unrelated to economic growth.

People engage in lengthier production processes *because* these will lead to the output of a *larger* quantity of consumption goods at some point in the future *than otherwise would have been the case.*

This means that a change in intertemporal preferences–say, decreasing time preferences–on the one hand, and economic growth or increasing wealth over time on the other are not only historically and accidentally related, as a matter of contingent fact. To the contrary they are essentially related and this insight follows from the individual's acting and choosing being taken as the basic starting point of the analysis, that is, it is entailed by methodological individualism.

This was clearly seen by Böhm-Bawerk and Mises. In Böhm-Bawerk we find the idea that

> one thing that can be stated with a reasonable degree of certainty is the proposition . . . that as a general rule a wisely selected extension of the roundabout way of production does result in an increase in the magnitude of the product. It can be confidently maintained that there is no area of production which could not materially increase its product over the result obtained by its present method.[5]

Now according to Böhm-Bawerk the only basis of this proposition is the experience of practical life; economic theory does not and cannot show *a priori* that it must be so: "This observation . . . is based on experience, and only on experience" (Böhm-Bawerk 1959, bk. 2, chap. 2, p. 83). As Stigler (1994, p. 201) adds: "the pragmatic proof lies in the fact that such methods would not be used if they were not more productive."

Why? As Böhm-Bawerk (p. 82) explains: "The disadvantage which attends the capitalist method of production consists in a *sacrifice of time.* Capitalist roundaboutness is productive but time consuming. It yields more or better consumption goods, but not until a later time." Böhm-Bawerk thus felt that a

[5]Böhm-Bawerk (1959, bk. 2, chap. 2, pp. 84-85). He also distinguishes two facts. One is, that a lengthening of the roundabout methods of production results in an increased quantity of the product; the other is that this increase begins to fall off at a certain point, that is, the lengthening of the production period increases the product, but "in a lesser ratio" or "in constantly decreasing proportion" (p. 85) than the relative increase in the production period.

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more "time-consuming" process of production would not be chosen *unless* it was more productive, that is, unless it added sufficiently more value to compensate for the longer "waiting" required.

But then it can also be maintained, reasoning in terms of a variant of Say's Law, that the increased supply of (future) consumption goods will create its own demand, and that therefore the real wage *must* be higher, at least in long-run equilibrium. Actors forego present consumption and engage in increased saving–and more roundabout production processes–now *because* this lengthening of the production structure yields a greater amount of consumption goods at some point in the future.

People engage in lengthier production processes because this leads to output of a greater quantity of consumption goods at some point in the future than otherwise would have been the case.

Thinking in terms of a variant of Say's Law arguably this greater supply must be matched by a greater demand. Therefore, it is difficult to see how it would be possible that real wages–*ceteris paribus*–do not rise.[6]

Does this mean there exists a "necessary" or "apodictic" link between increasing real wealth over time and the lowering of time preferences?

The answer seems to be in the affirmative in the following sense. If at a moment in time, say T_1, actors do not engage in a more roundabout process despite the increases of product this would entail, and at a later moment, T_2, they do engage in this process, then *ceteris paribus* the inference that intertemporal preferences have changed–in the sense of decreased time preference–between T_1 and T_2 seems legitimate since *ceteris paribus* such a change provides the best possible explanation of the actors' decision now to lengthen the production structure. At T_1 the value of the increase of the product that could be acquired by a lengthening of the structure of production was not deemed sufficient to compensate for the longer waiting required, whereas at T_2 it was deemed sufficient. At T_2 "the cost of waiting" no longer outweighs the expected value of the increase of the product whereas at T_1 it still did. Therefore the conclusion seems warranted that the actors' time preferences have been lowered during the time period intervening between T_1 and T_2.

Inversely, *if* time preferences are lowered, the expected value of the increase in the product to be derived from some possible more roundabout production process will now, at the margin, outweigh the implied "cost of waiting," whereas before it did not, and actors will, *ceteris paribus*, engage in the lengthier production process. In the aggregate and over time this will be accompanied by a higher wage rate.

We can even go further. Even if the notion of secular growth with assumed interest rate neutrality involves no conceptual contradiction, it is doubtful

[6]Or more correctly, to the extent Say's Law obtains. Say's Law is a conditional proposition, not an unconditional proposition.

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whether we would ever expect to encounter the corresponding phenomenon in historical reality. As people earn more, they save more, but it does not follow that the (social) proportion or ratio of consumption to saving and investment would remain exactly the same. The latter situation would rather seem to be like a purely conceptual possibility, very unlikely to be met in historical reality where it seems possible to occur only because of *coincidence* or *accident*. More likely we would encounter the situation characterized by a decrease of what Rothbard has labeled the *effective time-preference rate*, that is, the (social) *proportion* of consumption to savings-investment will be lowered.

Garrison might object that his construction is still justified on the ground that it serves convenience of exposition even if it may lead to somewhat counterintuitive propositions, such as the wage rate returning to its initial level after a capital restructuring. Nevertheless, this method is at odds with the traditional Austrian causal-realistic or causal-genetic method which recommends that the logic of exposition should follow as closely as possible the logic of how the phenomena themselves develop.

The causal-genetic method was characterized by Piaget in a somewhat different context:

> The ideal in causal deduction . . . is a deductive argument applied to the production of phenomena. This argument is all the more satisfactory if deductive steps correspond to the links between the subject matter of the theory so that the order of the explanation reflects that of the antecedents and consequences involved in the actual and temporal unfolding of events. In other words, causal explanation will succeed insofar as each transformation involved in the relations between the objects corresponds to a transformation or operation in the deduction, this last being copied from reality. (Piaget 1968 p. 161)[7]

My second fundamental criticism relates to a certain lack of balance in the way in which Garrison treats the Austrian and Keynesian "visions" respectively.

With respect to Keynesianism we are taught by Garrison (p. 185) that the *General Theory* was ultimately an exercise in comparative institutional analysis–or, as some economists would now say, in constitutional economics.

Let it be recognized first that the quality of Garrison's discussion of Keynesianism is unsurpassed; almost to the extent that one is tempted to say that, in some respects, his treatment of Keynesianism–in chapters 7, 8, and 9–is superior to his discussion of Austrian theory.

We thus learn that liquidity preference plays only a secondary role in Keynes's account of the business cycle–contra Krugman–but that an increase

[7]Of course, from an Austro-praxeological perspective we would not want to indulge in psychologism. Therefore, Piaget's characterization must be interpreted, in the present context, to have only metaphorical relevance.

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in liquidity preference that follows on the heels of a collapse in investment demand may certainly be an aggravating development. The scramble for liquidity is a secondary problem. The primary problem, which manifests itself as a collapse in investment demand attributable to increased uncertainty aversion, is *business pessimism.*

Neither is the issue of the stickiness or flexibility of the wage rate essential to an adequate understanding of the problem identified by Keynes. As a theoretical matter the extent of the wage rate's flexibility is very much a subsidiary issue.

According to Keynes, cyclical unemployment is but one of the two components of involuntary unemployment. The other is secular unemployment. To fight this component of unemployment, policy tools will not suffice; social reform is necessary. Fiscal policy is only the second-best solution to the primary problem.

However, involuntary secular unemployment is not unemployment in the sense of Marshallian partial equilibrium analysis. The labor market clears. Keynes's secular unemployment is involuntary in that the market itself provides no effective mechanism through which individuals can eliminate the fetish of liquidity or its consequences. The most fundamental component of Keynes's involuntary unemployment is thus the comparative-institutions employment differential deriving from the decentralization of the investment sector and the fragmentation of the saving-investment decision under capitalism. This fault would be absent from socialism—the latter term meaning capitalism minus its faults.

The comparative-institutional dimension of the Austrian approach, however, is largely left out of the picture.[8] This blind spot in Garrison's approach becomes particularly conspicuous in chapter 11, where he sets out to compare Austrian theory with monetary disequilibrium theory.

It has now almost become commonplace to state that the Austrian theory is not a theory of depression per se but rather a theory of the unsustainable boom (p. 240). Moreover according to this view there need be no direct rivalry between a theory of the unsustainable boom and a theory of depression.

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[8]On this issue, see de Soto (1998). In a recent article I insisted upon the difference between Mises's approach and that of the Rothbardians and argued that Mises's policy recommendation fully agrees with the precepts of Hayek's legal theory (Van den Hauwe 2000, p. 585). I now realize that this view is not fully adequate. In fact it seems that Hayekians and Rothbardians can reach similar conclusions when evaluating fractional reserve banking. Hayekians and Rothbardians also have in common a fierce rejection of positivism in legal (or ethical) matters; moreover, both Rothbardians and Hayekians hold the view that ethical or legal-theoretic questions are, in general, rationally decidable. Mises to the contrary, as is well known, explicitly rejected natural law. When discussing fiduciary media, he even wrote:

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Thus, according to Garrison, whereas Austrian theory may best account for some nineteenth-century downturns and for the downturn at the end of the 1920s easy-money boom, monetarist theory may best account for the prolonged contraction that followed the initial downturn in 1929, which seems to be wholly attributable to an unexpected and ill-advised monetary contraction (pp. 228-29).

This fact, the argument runs, is not always clearly perceived. Dr. Yeager, for instance, is perceived as taking the Austrians and the monetarists as offering rival theories of depression:

> Yeager misidentifies the proximate consequence of credit expansion, taking the depression itself (rather than the intertemporal discoordination and hence the inevitable crisis and downturn) to be the focus of the theory. It is true that the depression that is likely to ensue can be deeper and longer-lasting than the initiating cause would imply. (p. 240)

The traumatic experience of the Great Contraction-Depression thus continues to haunt the economics profession.[9] But what constituted this Great Contraction? In that respect Friedman and Schwartz wrote:

> The deposit-currency ratio has been of major importance primarily during periods of financial difficulties. In each such period, the public's loss of confidence in banks led to an attempt to convert deposits into currency which produced a sharp decline in the ratio of deposits to currency and strong downward pressure on the stock of money. The establishment of the Federal Reserve System was expected to deprive such shifts in the deposit-currency ratio of monetary significance by providing a means of increasing the absolute volume of currency available for the public to hold, when the public desired to substitute currency for deposits, without requiring a multiple contraction of deposits. In practice, it did not succeed in achieving that objective. The most notable shift in the deposit-currency ratio in the 93 years from 1867 to 1960 occurred from 1930 to 1933, when the ratio fell to less than half its initial value and in three years erased the

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> It is usual to reckon the acceptance of a deposit which can be drawn upon at any time by means of notes or checks as a type of credit transaction and juristically this view is, of course, justified; but economically, the case is not one of a credit transaction. If *credit* in the economic sense means the exchange of a present good or a present service against a future good or a future service, then it is hardly possible to include the transactions in question under the conception of credit. (Mises 1981, pp. 300-01)

But of course this view is questionable. Why should we accept that a wedge be driven between the "economic" point of view and the "juristic" point of view, or between "economic reality" and "juristic reality"? This view seems acceptable only if we at least implicitly accept a positivistic conception of the law, in other words, if the law is regarded only from a *de lege lata* viewpoint and not from a *de lege ferenda* perspective.

[9]See also Horwitz (2000).

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> secular rise of three decades. Though the absolute volume of currency held by the public rose, it did so only at the expense of a very much larger decline in deposits, the combined effect being a decline of one-third in the total stock of money. (Friedman and Schwartz 1993, pp. 684-85)

It thus seems that when monetary disequilibrium theorists complain about the possibly disastrous effects of "excess" demands for money, what they really have in mind, at least as an initiating cause, is a decrease in the money supply as may result from a decline in the deposit-currency ratio.[10]

During the Great Depression of the 1930s, the money stock fell by one third. This monetary deflation occurred when the United States was on a gold standard, but it was a *fractional reserve-based* gold standard. Obviously under a *pure* gold standard such a monetary deflation would have been virtually impossible. Under a *pure* gold standard, bank runs do not affect the money supply.[11] The world supply of gold and hard monetary reserves is

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[10]According to monetary disequilibrium theory the initiating cause of the bust is indeed a decrease in the money supply. The resulting monetary disequilibrium can provoke a scramble for liquidity, intensifying the economy-wide disequilibrium. On the basis of historical experience the old monetarists, especially Warburton, had already argued that it is a collapse in M and not a fall in V that brings on depression. They recognize, however, that people's reaction to monetary disequilibrium may entail a fall in V—a scramble for liquidity—which adds to the problems caused by the decrease in the money supply. An excess demand for money puts downward pressure on all prices. For equilibrium to be reestablished, all prices and wages have to adjust downward and can do so only on a piecemeal basis. Complex and far-reaching interdependencies among individual prices and wages, combined with the who-goes-first problem, preclude a quick and smooth adjustment in their general level. Quantity adjustments on an economy-wide scale, that is, depression, characterize the period of slow and ragged adjustments in prices and wages (p. 234)

As Garrison explains, the money supply is particularly susceptible to collapse when policymakers are trying to cope with the final throes of a policy-induced artificial boom. Intertemporal discoordination of economic activity, waning confidence on the part of the business community, and indecision of the monetary authority can set the stage for a collapse of the money supply. And the decrease in the quantity of money, which puts downward pressure on all prices at the very time that systematic adjustments in relative prices are underway, can make the depression much more severe than it would otherwise have been (p. 251).

However, the whole scenario is context-specific, that is, it is not invariant under a modification of the institutional context. The described effects would disappear under a pure, that is 100-percent reserve, gold standard.

[11]Under 100-percent reserves, shifts between deposits and currency would have no effect on the total stock of money and banks could not alter the ratio of deposits to reserves. The result would be to remove completely any instability in the stock of money arising from these sources (Skousen 1996, p. 83). As Skousen explains:

> Under a pure gold standard, banks would be required to maintain a 100 percent reserve, which would calm the fears the public might have regarding the solvency of banks. Why would

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always increasing. It is, in fact, inconceivable that a monetary collapse could occur under 100-percent reserves, as happened in 1929-32.

Now Garrison could point out that this insight is obviously not sufficient to turn the Austrian theory into a theory of depressions. Being able to point to the conditions under which a depression–and in fact the unsustainable boom itself–would be impossible, or at least very much unlikely, is not yet the same thing as presenting a *theory* of depressions–or a *theory* of the boom-bust cycle.

Nevertheless, from a comparative institutions perspective, one would have expected Garrison to have at least mentioned the theoretical link between fractional reserve banking, unsustainable boom, and depression.

Conclusion

According to this writer Garrison's *Time and Money* is precisely what it purports to be: an exercise in comparative frameworks.

Even if it should be recognized that the comparison of different theoretical traditions within a unified–graphical and conceptual–framework may require a number of concessions that are not without drawbacks–in the sense that one or more of the theories thus compared may come out of the exercise more or less mutilated–there can be no doubt that Garrison's endeavor must be considered a success. The foundation has now been laid not only for renewed and fruitful discussion with different and related schools of thought at the highest level of scholarly debate–an event without its equal since the Hayek-Keynes debate during the first half of the last century–but also for further research along Austrian School lines.

References

Böhm-Bawerk, Eugen von. 1959. *Capital and Interest.* South Holland, Ill.: Libertarian Press.

Cochran, John P., and Fred R. Glahe. 1999. *The Hayek-Keynes Debate-Lessons for Current Business Cycle Research.* Lewiston, N.Y.: Edwin Mellen Press.

> panicky depositors want to withdraw their money when the total amount owned is stored safely in the bank's vaults? And even if they did withdraw their funds, the total amount of money would remain unchanged. Under a fractional reserve system, converting deposits into cash can sharply curtail the money supply, but under 100 percent backing, it can have no such effect. Thus, bank runs would have no impact on the supply of money. Moreover, the government could not blunder in reducing the money supply because the monetary stock would consist entirely of gold bullion and coins. (1996, p. 82)

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ELECTRONIC REPRODUCTION PROHIBITED

Friedman, Milton, and Schwartz, Anna J. [1963] 1993. *A Monetary History of the United States.* Princeton, N.J.: Princeton University Press.

Garrison, Roger W. 2001. *Time and Money: The Macroeconomics of Capital Structure.* London: Routledge.

Hayek, F.A. 1935. *Prices and Production.* 2nd ed. London: Routledge.

——. 1941. *The Pure Theory of Capital.* London: Routledge.

——. 1978. *New Studies in Philosophy, Politics, Economics, and the History of Ideas.* London: Routledge.

Hicks, John. 1967. "The Hayek Story." In *Critical Essays in Monetary Theory.* Oxford: Clarendon Press. Pp. 203-15.

Horwitz, Steven. 2000. *Microfoundations and Macroeconomics: An Austrian Perspective, Foundations of the Market Economy.* London: Routledge.

Huerta de Soto, Jesús. 1998. *Dinero, crédito bancario y ciclos económicos.* Madrid: Unión Editorial.

Mises, Ludwig von. 1943. "'Elastic Expectations' and the Austrian Theory of the Trade Cycle." *Economica* 37:251-52.

——. [1934] 1981. *The Theory of Money and Credit.* Indianapolis, Ind.: Liberty*Classics.*

——. [1949] 1998. *Human Action: A Treatise on Economics.* Scholar's Edition. Auburn, Ala.: Ludwig von Mises Institute.

Piaget, Jean. (1968) "Explanation in Psychology and Psychophysiological Parallelism." In *Experimental Psychology: Its Scope and Method.* Paul Fraisse, and Jean Piaget, eds. London: Routledge and Kegan Paul.

Samuelson, Paul. 1962. "Parable and Realism in Capital Theory." *Review of Economic Studies* 29:193-206.

Sapir, J. 2000. *Les Trous Noirs de la Science Économique—Essai sur l'impossibilité de penser le temps et l'argent.* Paris: Albin Michel.

Skousen, Mark. [1977] 1996. *Economics of a Pure Gold Standard.* Irvington-on-Hudson, N.Y.: Foundation for Economic Education.

Stigler, George J. [1941] 1994. *Production and Distribution Theories.* New Brunswick, N.J.: Transaction Publishers.

Van den Hauwe, Ludwig. 2000. "An 'Austrian' View on Economic Policy (In)Effectiveness." *Wirtschaftspolitische Blätter* 5-6:578-86.

——. 2001. "Hayek's Accelerationism: A Rectification." *Wirtschaftspolitische Blätter* 2-3: 311-16.

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